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#48

March 1992

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LEANDER



LEANDER

Thanatos lurks in his lair, bathing in the power-giving life-force he is sucking from Princess Lucanna.

Princess Lucanna is dying: Imprisoned in the Sphere of Depletion her strength will soon be gone.

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*You play the part of the Princess as she hangs around inside the Sphere Of Depletion waiting for Leander to rescue her. Will he make it? Or will you spend the entire game doing nothing but having your life-force sucked?

Leander: Where heroes Sphere to tread!

*Psygnosis reserve the right to amend this storyline.

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Screen Shots from the Amiga Version



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Circle #125 on the Reader Service Card



Issue #48, March 1992

About the cover: This month's cover was rendered in 24 bit color with NewTek's *Lightwave 2.0*. The entire cover (except for the small text) is a single 10 megabyte bit map. The strange object is a 3D Lissajous curve generated by Technical Tools' *Lissa* (see New Products this issue). As always, *.info* is produced and managed entirely with Amigas running off-the-shelf consumer software and peripherals. *.info* was the first magazine in the world produced entirely with personal computers.

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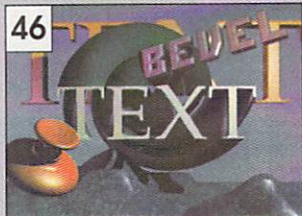


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Serious Science Software
Using the Amiga for science and math.
.info Exclusive: Maple V review!



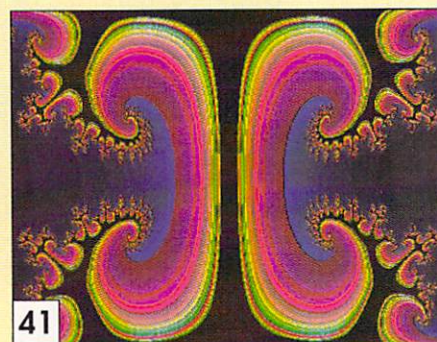
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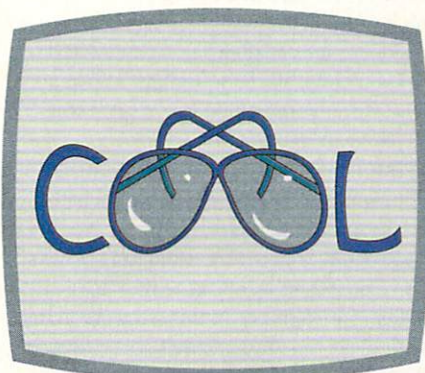
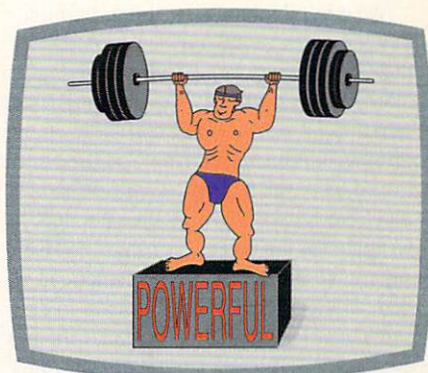
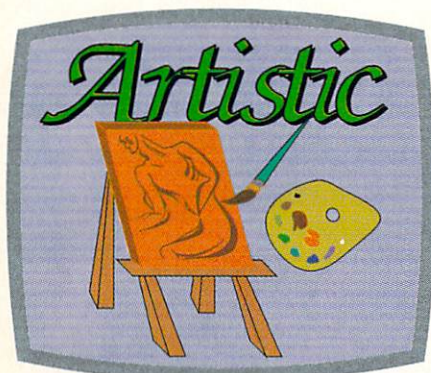
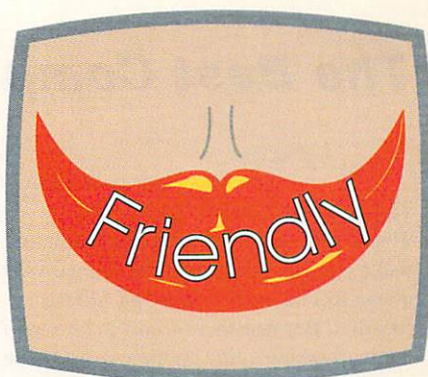
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A few words about ProVector™, the professional illustrator's choice...



Each of the above drawings was created using just a few of the incredible number of features and effects in ProVector 2.1. Professionals and home-users alike are praising the remarkable speed, ease of use, and flexibility of ProVector. If you're serious about creating professional-quality structured artwork on your Amiga, ProVector is the only real choice.

All illustrations were created with ProVector 2.1, then imported into Saxon Publisher 1.1 to create this ad. Registered owners of ProVector 2.0, be sure to contact Stylus, Inc. for upgrade information, you'll find a tremendous number of additional features and functions in ProVector 2.1 over previous versions. ProVector is a trademark of Stylus, Inc., Saxon Publisher is a registered trademark of Saxon Industries, Amiga is a registered trademark of Commodore-Amiga, Inc. Copyright 1991 - Stylus, Inc.

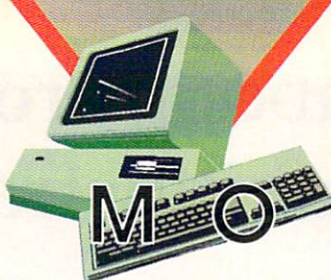
Any questions?

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Circle #128 on the Reader Service Card



The Best Computer in the World

Okay, let's say it right up front: This editorial is a cheerleading piece. That's right, it's an unabashed attempt to make you feel good about the Amiga. Why do we feel the need to write an editorial like this? Because there seems to be a lot of Amiga-bashing going on these days. Some people have even accused us of doing some.

We don't think of it as Amiga-bashing, though, when we say the Amiga needs updated technology, or reasonable pricing, or a broader product line. We think of it in the same way that *Newsweek* must when they print an editorial criticizing Congress or the President or the Supreme Court. When they're critical of the way the system is working (or not working), *Newsweek* isn't saying we should abolish the American democratic system of government. In the same breath in which they criticize the government, *Newsweek* enthusiastically supports the ideas and ideals of our Founding Fathers. They're just advocating some change; they're hoping the system will work even better because of what they say.

That goes for us, too.

The Amiga is a totally unique computer. It was the first to bring real graphics power to the masses at a price low enough that the masses could afford to seriously consider what they might *do* with real graphics power. Amiga hardware and software alike are priced so that people - real people, not just corporate people - can experiment with fractals, and image processing, and multimedia, and animation, and music, and digitized sound. Like American democracy, that's some revolutionary concept. When the Amiga was first introduced in 1985, the idea of bringing that kind of computing power to the people hadn't even occurred to IBM or Apple. It took them so much by surprise that seven years passed before they could adequately respond to the challenge. In many ways, they still fall short.

Because the Amiga is still a helluva computer. People can talk all they want about what a 'great deal' a '386 clone is at 'under

\$1000', but what do you get for your money? The capability to run a lot of under-powered, high-priced MS/DOS and Windows software. It still ain't an Amiga, folks. You got no decent sound, you got 256 colors (which isn't HAM), and you got a meg of RAM (all of which is used up by the operating system if you run Windows.) The Amiga can run significant multitasking applications in just 512K of RAM. Nobody, and I mean nobody, else can come even close to that. Multitasking on other platforms is just plain sluggish... at least, until you have a couple of grand to throw at upgrading your system.

Of course, time marches on, and Amiga applications have progressed to the point where it really is time that the Amiga should move on, too. And, like the others who grumble about Commodore's sluggishness, we believe that they could, right now, deliver an '020 based machine with enhanced graphics, a 40 meg hard drive or better, a monitor, and a meg of RAM for under \$1000. We wish they would. It would make our jobs a *lot* easier. And they'll have to eventually, since the Amiga is up against a lot stiffer competition now than it was seven years ago.

But they haven't yet, so we are stuck with what we've got. But at least what we're stuck with a great machine. And we know Commodore *is* working on the next wave of technology. Maybe they'll even adjust Amiga prices so they're more in line with the competition. Who knows? But, in the meantime, we can bask in the knowledge that whatever Mac and IBM users are buying, they're not Amigas. Not even close. And when the day comes that Commodore does make its next move, maybe they'll shake the earth as much as the C64 and the Amiga 1000 did in their day. Let's hope so. And let's hope that day comes soon.

- Mark & Benn

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.info (ISSN 08975868) is published monthly except bi-monthly in August-September by .info Publications, 705 Highway 1 West, Iowa City, IA 52246. US subscription rate is \$26.00, one year; \$47.50, two years; \$65.00, three years. Canada/Mexico rates in US funds are \$34.00, one year; \$63.50, two years; \$89.00, three years. Foreign surface rate is \$50.00 (US funds), one year. Second-class postage paid at Iowa City, IA and at additional mailing office. POSTMASTER: Send address changes to .info, 705 Highway One, Iowa City, IA 52246.

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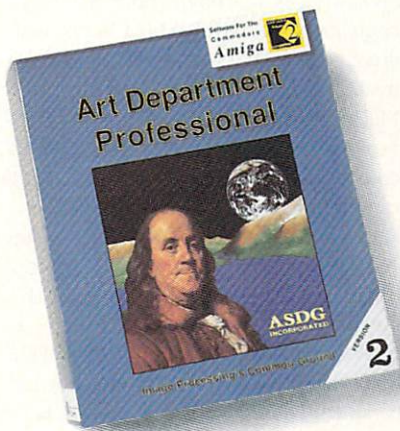
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Send EMail to the editors at:

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I totally agree with your editorial in the February 1992 issue. I have been trying to decide whether to upgrade my current A500 with a hard drive and memory expansion, buy an A2000HD, or buy a 386 computer. This was a tough decision, since I am also Systems Manager for the company I work at, which has MS/DOS compatibles. I love the Amiga, but more and more of my time is spent with clones.

The bottom line is that I had decided to vote with my emotions and purchase an A2000HD, selling my A500. Those plans came to a screeching halt after the price increase of January 1. Has Commodore gone nuts? It's getting very tough to justify an Amiga purchase. I definitely will *not* buy an A2000 at these prices. I can buy a 386SX 20MHz system with VGA color monitor and 80 meg hard drive for under \$1200.

I have been a dedicated Commodore owner since 1983. I have talked other people into buying Commodore products as well because I knew that Commodore offered the best bang for the buck for home use. That is sadly no longer true. They seem to have forgotten what got them where they are.

In order to survive in the U.S. market, Commodore must mass market both their Amiga line and their PC clones at competitive prices

I haven't bought my 386 clone yet, but if

Commodore doesn't wake up soon, I won't be the only one to make the decision to say 'Commodore, it's been nice, but it's time to move on.'

- Gordon Johnson, Grand Rapids, MI

This is only the beginning, folks. Read on:

- Mark & Benn

I have a dilemma. After being an A500 user for a little over a year, I decided to upgrade. I wanted to buy an A2000, which at the time was selling for \$1499. I thought I could afford it so I went to my dealer with my A500 and sold it. I got \$300 towards the purchase of a new Amiga. It got even better because at that time, the retail for an A2000 was down \$500 to \$999. I thought that it was a very good price, but since there was a lot of talk about Amiga OS 2.0 being put into new machines, I decided to wait, collect some more cash and buy the computer, hard disk, and extra RAM. The dealer told me that the Amigas with the new OS installed would be available by February. I patiently waited. But then in January, I saw the new price for the A2000 - \$1699!!! I couldn't believe my eyes. My jaw was on the floor. \$1699 for a computer with 1MB RAM, 1 floppy disk drive, and that's it - *never!* It may seem like treason, but I'm really considering buying a Mac or even an IBM. Just think: for \$1899 I can get a Mac with 16MHz '020, 32,000 colors, and 40MB hard drive. Or for \$989 I can get an IBM-compatible with 42MB hard drive, super VGA card, VGA monitor, 16MHz 386, one high-density 3.5" floppy drive, one 5.25" 1.2MB floppy drive, 3-button mouse, and keyboard. Is Commodore actually helping Apple to sell more Macs? I don't know what to do. I need a computer and I hope it's an Amiga - but not at this price. Please help me!

- Greg Laniewski, Port Chester, NY

The two letters above are only the tip of the iceberg of mail we've had on the subject of Commodore raising the price of the A2000. To be fair, they did state clearly that the pre-Christmas 1991 price was a sale price and only temporary. But they stunned everyone by raising the base cost as much as they did and everyone is in agreement

that it is way out of line. With the recession, clone makers lowering prices all over the place, and Apple selling Macs at lower-than-ever prices, we simply can't see any justification for what Commodore has done. If anything, their production costs for the A2000 have decreased. We can only shake our heads in sad bewilderment and hope that Commodore wakes up, smells the microchips, and brings the price back down.

- Mark & Benn

Just a quick note to thank you for a great mag. I almost did not renew my subscription this year with times being so tight, but I sat down and thought just how lucky Amiga users are to have such a great mag! I was always told if you like something, support it because you will miss it when it's gone. And I would hate to see .info go the way of so many others. It seems like I grew up reading .info - I was a diehard C64 fan and now I'm a diehard Amiga fan. Keep up the great work.

- John Sullivan, Port Huron, MI

You certainly know how to get your name in print! It's nice to hear now and then that we're appreciated. It's people like you who have allowed us to last into our ninth year of publication. Thanks for the first obligatory .info is great letter we've printed in a while.

- Benn & Mark

I just picked up your latest .info mag and read the distressing news about the delays in production of the Model 10 Amiga laptop. I immediately phoned Newer Technologies about the status of the machine and they said they were taking orders for it, but he 'didn't know' if any had been shipped yet. I am thinking of purchasing one, but I don't want to invest money in something that is as blurry as this. Any ideas?

- mboulanger, BIX

As always, we recommend that you keep your money and your VISA card number in your pocket until a product is real. We've been promised the 'first unit' for review, and will let you know immediately when the laptop is ready.

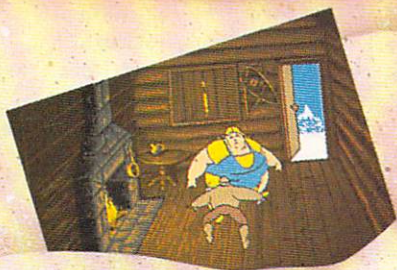
- Mark & Benn

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NEW PRODUCTS

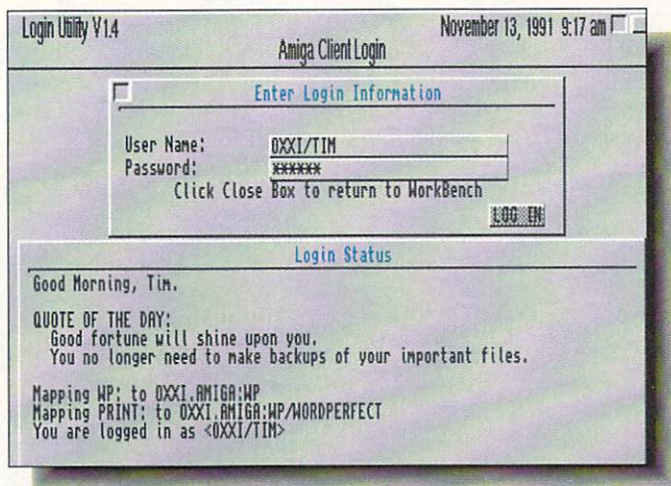
AMIGA & NOVELL

Some of the best news for the Amiga community in a long, long time comes with the release of Oxxi's **Amiga Client Software**, which allows Amigas to be connected to a Novell NetWare network. ACS requires Novell *NetWare 2.15* or better, a LAN ARC-Net or Ethernet card, and the necessary cabling, but once that's out of the way, installation of the software only takes a few minutes. The Amiga still functions as an Amiga, multitasking and all, but you'll be able to take advantage of all the network functions as well. There are utilities provided for file management and security, printer functions, login management (including passwords and scripts), network accounting, and so on. You can customize the system and have your preferences automatically set at login and scripts can execute both AmigaDOS and NetWare commands. Security for both the system and data are probably the most important considerations on a network, and there are plenty of provisions here. Directory access can be controlled, record-locking protects data in shared files, user files can be protected by password and access-rights assignment, and file ownership is assigned automatically. Multiple users can access a file concurrently and each user is provided with a confidential mail area. The system also includes an Amiga-specific backup/restoration utility and a message system.

The significance of *Amiga Client Software* is that it will bring our favorite machine into even wider acceptance as a viable addition to networks everywhere. The cost is on a scale: a single node costs \$199, up to five for \$499, up to ten for \$899, up to 20 - \$1299, and up to 50 - \$1799. Oxxi, PO Box 90309, Long Beach, CA 90809. 213-427-1227. RS #200

MASTER OF PRESENTATIONS

Oxxi's description of **Presentation Master** starts off with the line, "Remember Show and Tell?" Well, yes we do, but we're trying to forget the embarrassment when we showed the entire second grade the pictures of Uncle Delbert and the stripper. *Presentation Master* could



One of the several utilities from Oxxi's *Amiga Client Software*, which connects an Amiga to a Novell network.

have helped us do a much better job of it. It is a sophisticated system for creating both onscreen and hardcopy presentations. *PM* is organized around a slideshow metaphor with a multi-level hierarchical structure.

Slides can be grouped, rearranged, cut, and pasted to your heart's content. The individual slides can contain hotspots, so users can click on a spot and move to another slide or subset of slides (a standalone player program is included in the package). There's an object-oriented paint section that supports standard objects like circles and rectangles, splines, and the other usual functions of a structured drawing program, as well as object tweening and morphing.

Tools for getting text onto the slides include wordprocessor functions, embossing, outlines, and automatic dropshadows. You can also cut and paste from one slide to another, a real timesaver. Charts can be generated from data imported from spreadsheets or ASCII files. You can also enter data directly if you want and it is possible to revise it even after rendering the chart. The special text effects can also be applied to the charts. Font support includes the same scalable PolyFonts used in Aegis' *Video Titrer 3D*; they can be bent, distorted, resized, and otherwise tortured just like other structured objects. It can also use Amiga Outline fonts. Clip art can be applied in a variety of formats, including not just the usual Amiga brushes and IFF files, but also Adobe Illustrator EPS format files. Once imported, the objects are con-

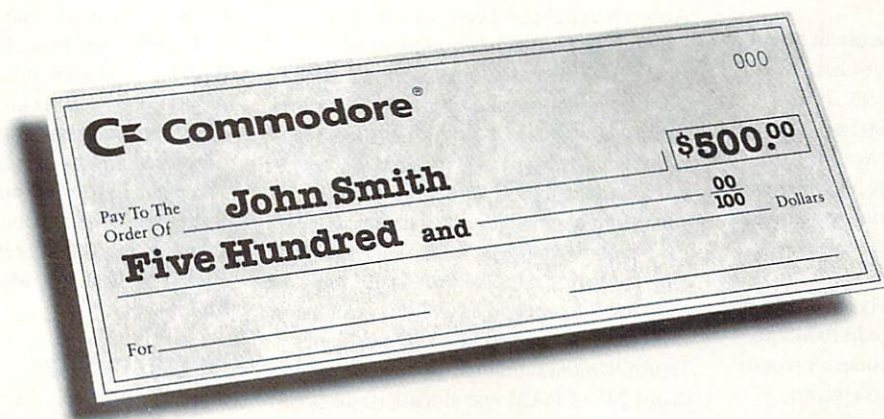
verted to *Presentation Master* objects which are then fully-editable. *PM* uses an internal palette of 16.7 colors and has a pop-up palette of over 200 colors.

When it comes time for output, colors can be specified as CMYK or 24-bit RGB for Pantone or DIC matching. They can be sent to PostScript devices with no loss of accuracy. Output can be through standard Amiga printer drivers as well as both black & white and color PostScript. There's a function for posterizing slides and another for PostScript storyboard output. Whew! Sounds like a complete presentation system from here. *Presentation Master* requires at least 2 megs of RAM (more is always better) and a hard drive. Price is \$299.95. Oxxi, PO Box 90309, Long Beach, CA 90809. 213-427-1227. RS #201

OUT OF THE WAY

Does your mouse cord invariably get in your way? Of course it does, that's one of the eternal laws of the universe. *Advanced Image* has come up with a solution for you. **Mouse Control** is a little stand with a hook at the top to hold the mouse cord, thus elevating it up out of your way. It sits on a plastic base and has a spring so it can flex if it needs to. It's a clever device and its \$9.95 pricetag won't break your budget. 2 Route 13 South, Brookline, NH 03033. 603-673-0212. RS #202

500 Reasons To Buy An Amiga® 3000 Before April 30th



A check for five hundred bucks.

That's what you can get direct from Commodore when you buy an Amiga® 3000-25/50, or 3000-25/100 before April 30th. Or, you can even use your \$500 immediately right in the store toward the purchase of your Amiga.

Amiga 3000 series computers set the standard for multimedia platforms, with true 32-bit architecture for demanding video and graphics applications. The A3000-25/100 features a 100M hard drive and 5M RAM.



The A3000-25/50 has a 50M hard drive and 2M RAM.

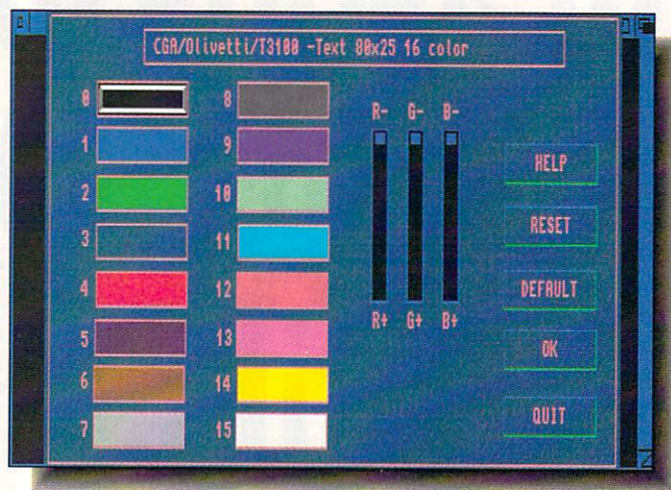
All Amiga 3000's feature four-voice, two-channel sound, thousands of displayable colors, AmigaVision™ (which lets you control graphics and video simultaneously), on-site service* and convenient leasing terms.

For more information, call 1-800-66-AMIGA. Or see your participating authorized Commodore-Amiga dealer before April 30th. (Terms may vary in Canada. Call 1-800-661-AMIGA.)

Commodore
AMIGA

NEW PRODUCTS

One of the configuration screens used in setting up GVP's PC286 IBM AT emulator the way you want it.



GVP MS-DOS

Don't even think about buying an IBM AT clone until you've checked out Great Valley Products' **GVP/PC286**. Before we go any further, you have to know that it *requires* a GVP Series II A500HD8+. The board plugs into the mini-slot of the hard drive/expansion system and won't work on anything else. However, if you do have one of GVP's Series II drives, this is a painless and relatively inexpensive (retail price is \$469) way to add IBM 286 capability to your system. It doesn't require you to open up your A500, so you won't void your warranty, and it installs easily in the Series II.

The PC286 is built around a 16Mhz 80286 CPU, has 512K of RAM onboard, and has a spot for an optional 80C287 math co-processor. The unit boasts a Norton speed index rating of 15, comparable to some 386 machines. The PC286 runs as a concurrent process on the Amiga and can automatically use any Amiga floppy drive as an MS-DOS device, leaving your Amiga to multitask merrily away. There will be some slowdown depending on what graphics modes you choose, but it's still surprisingly quick. It supports MS-DOS partitions on GVP Series II hard drives, which is only to be expected since it lives in one. The most practical considerations have all been anticipated: the mouse is recognized as a COM 1 or COM 2 Microsoft serial mouse, the serial port can be configured as COM 1

or COM 2 (depending on mouse), the Amiga parallel port becomes LPT1, and the Amiga's internal clock is used. Memory can be allocated as you prefer; the PC286 starts out with the base 640K and you can specify how much of the Amiga's memory is used as Extended or Expanded memory, up to six megabytes. Of course, what you're really wondering is whether the PC286 does Windows. It does indeed, running unrestricted in 286 Protected Mode, allowing it to operate as a 32-bit machine capable of addressing up to 16 megabytes. To use Windows, though, you'll need more than 1 Mb of RAM and at least 10 megs of hard disk storage. In real life, you'll probably want to configure the system to use all the available RAM on your machine; Windows is a champion memory hog. The video display offers several emulation options: EGA & VGA monochrome, CGA 16-color, Hercules, Olivetti, and Toshiba 3100. The display is also compatible with Amiga flicker-fixers. The PC286 package comes with installation software, a disk of utilities, and a thorough manual. You will have to provide your own MS-DOS version 3.2 or higher, or DR DOS 5.0 or above. 600 Clark Avenue, King of Prussia, PA 19406. 215-337-8770. RS #203

FONT NEWS

The latest in Kara Computer Graphics' long line of high-quality fonts are **Headlines 3** and **AnimFonts 4**. The

Headlines 3 four-disk set (\$79.95) contains four popular Toaster font typefaces converted to 8-color hi-res. The styles are CHROMEserif, GOLDextrude, GRANITEchisel, and MARBLEbevel. They come in three sizes: 76, 100, and 124. The **AnimFonts 4** (\$59.95) is a beautifully rendered CHROMEchiselSCRIPT gothic-type font that can be used with any software that supports the AnimBrush format. The animated characters start off by wiping a static image onto the screen and then burning it off with a laser beam. Neat effect. 2554 Lincoln Blvd., Suite 1010, Marina del Rey, CA 90291. 310-578-9177. RS #204

MORE FONT NEWS

Image Fonts is a three-disk set containing a single font in four different styles, all in *Imagine* object format. The typeface is a medium bold Bank Gothic and the styles are plain, chisel-edge, bevel-edge, and an embossed-edge with a plain-edged center. This last one is actually a two-piece font. The font is designed for Phong shading and includes the letters A-Z and numerals 0-9. \$29.95 from CRC Productions, PO Box 9, Mantachie, MS 38855. RS #205

CROSSOVER

Consultron garnered justifiable praise for **CrossDOS**, their virtually transparent MS-DOS/Amiga file transfer software. It made life with a Bridgeboard worth living. Now the company is releasing an upgrade and an entirely new product that can make MS-DOS even easier to get along with. **CrossDOS version 5.0 Plus** not only has an enhanced version of the file transfer utility but also includes **CrossPC**, a PC-XT emulator done entirely in software. CrossDOS itself now supports 1.44 megabyte high-density and 20 Mb floptical disks in addition to the usual 360K and 720K format floppies, along with MS-DOS partitions on your hard drive. Consultron has also redone the interface, improved error handling, and reworked the utilities. **CrossPC** is compatible with AmigaDOS 2.0 running on any model (there's even an optimized version for 68020, '030, and

NEW PRODUCTS



'040 machines) and is configurable to boot from a PC partition on an Amiga hard drive. You will have to supply your own copy of MS-DOS, version 3.0 or higher. *CrossPC* runs as a task on the Amiga, making it possible to run IBM and Amiga software at the same time. Owners of earlier versions of *CrossDOS* can upgrade for \$20, and the retail price of the new *CrossDOS version 5.0 Plus* is \$59.95.

Consultron is also shipping the **Ambassador**, a utility specifically for Bridgeboard users. It allows the Bridgeboard to access any drives attached to the Amiga as if they were connected directly to the Bridgeboard. That means no more swapping drives around. The *Ambassador* provides direct access to virtual partitions created by the Bridgeboard, though it offers faster access through its own version of virtual drive partitions. The *Ambassador* lists for \$79.95 and owners of *CrossDOS* can upgrade to it for \$40.

As if these two new titles weren't enough, Consultron is distributing **Contact**, a "Phonebook at your fingertips" which was originally published in Australia by DeskTop Utilities. It's an memory-resident address book that can be called up with a hotkey of your own choosing. One of the niftiest features is that it can be popped up on nearly any program's screen and will type an address directly into any text window. That means you can select the address you want, hit a button, and have it appear in your wordprocessor or whatever; it even supports the clipboard device. The software also has a phone dialler, label printing function for Preferences and PostScript, and ARexx support for all its functions. As icing on the utility cake, *Contact* also includes *CalcKey*, an onscreen calculator with the same screen-sharing features as *Contact*. Cost is \$59.95. For more information, particularly for upgraders, contact Consultron at 11280 Parkview, Plymouth, MI 48170. 313-459-7271. RS #206

MATHING AROUND

We love interesting mathematical software around here and the latest we've come across is *EasyScript! Software's Mark's MathLab*. It's aimed at

high school or college-level math students, but that doesn't stop it from being of interest to anyone else. The software has 34 built-in mathematical functions, a variety of graphing modes, and online help. The function requesters can accept up to 150 or 225 characters, with up to 75 tokens and quads per expression, and as many as 30 constants for each expression. Plotting of single

variables can be in either Cartesian or Polar coordinates and two-variable functions can be plotted with or without hidden surfaces. The graphs can be viewed from any rotational position. Sounds like a good time to us! \$49.95. 10006 Covington Drive, Huntsville, AL 35803. 205-881-6297. RS #207



We're making waves

Real3D is a revolutionary 3D modelling, ray-tracing and animation package. Version 1.4 is now available.

Includes sophisticated solid modelling, 24 bit rendering, superior material handling, fog effects, and several mapping methods.

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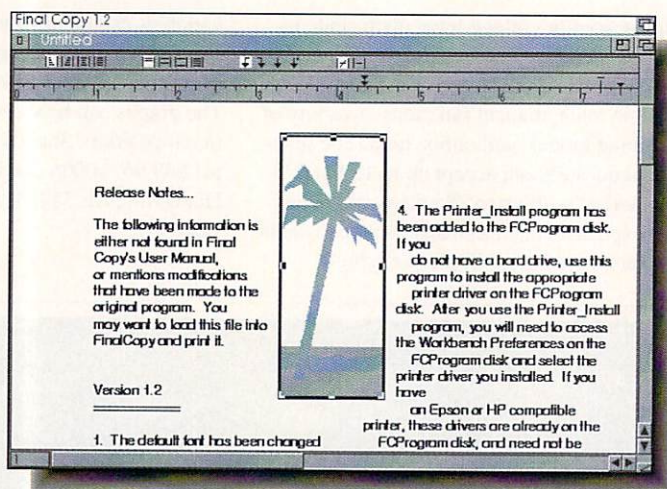
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NEW PRODUCTS



Text automatically flowed in two columns around a graphic in SoftWood's new wordprocessor, *Final Copy*.



LAST REPRODUCTION

There's a new kid on the word-processing block. **Final Copy** comes from SoftWood and Woody Williams, author of *PenPal*, *Proper Grammar*, and other Amiga hits. The emphasis in *Final Copy* is on printed output and it is based around outline font technology. The package comes with 34 outline typefaces, which since they're not bitmap fonts, can be scaled to whatever size you need and printed at the best resolution your printer is capable of. There's also a built-in PostScript driver to give you the best possible output. The characters can be scaled from 4-point all the way up to 300-point, which translates to 1/8 of an inch to nearly 4 inches. If you need anything bigger than four inches, we'd suggest skywriting instead. *Final Copy* isn't limited to just high-quality type, either. There's provision for importing graphics and *Final Copy* uses a 12 bit-plane technique for printing them in their original colors. The graphics can be cropped and placed anywhere on the page and text will automatically flow around them. The usual editing functions are present, along with layout tools that include leading control (4 to 250 points), automatic text columns, and various levels of magnification. *Final Copy* also has its own 116,000 word dictionary and 470,000 synonym thesaurus that includes definitions and works very much like Softwood's *Electric Thesaurus*. The most surprising thing about *Final Copy* is its price; it retails for \$99.95. Given the

power and quality, we would have expected it to be a couple of hundred bucks more. PO Box 50178, Phoenix, AZ 85076. 602-431-9151. RS #208

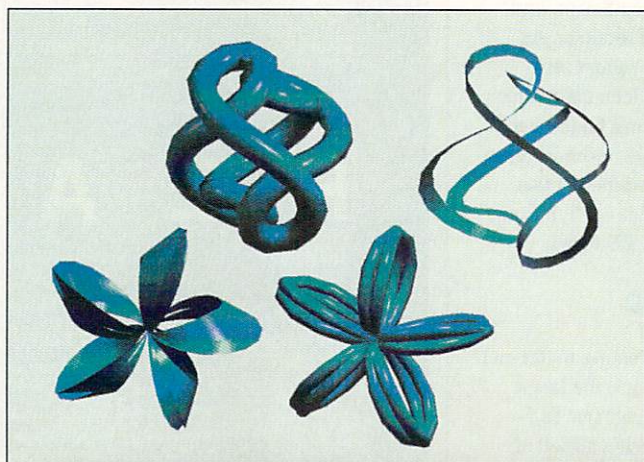
CURVACEOUS

It is going to be a lot easier to show what *Lissa* does than describe it in words. If you'll look at the graphic at the bottom of the page, you'll see some shapes (referred to as Lissajous curves - hence the name) that were generated by the program. They can be used in one of two ways, either as motion paths for *Imagine* or *Turbo Silver*, or as the basis for extruding objects. The curves are shaped by sinusoidal functions defined on a sphere. The manual describes the process in terms of a pendu-

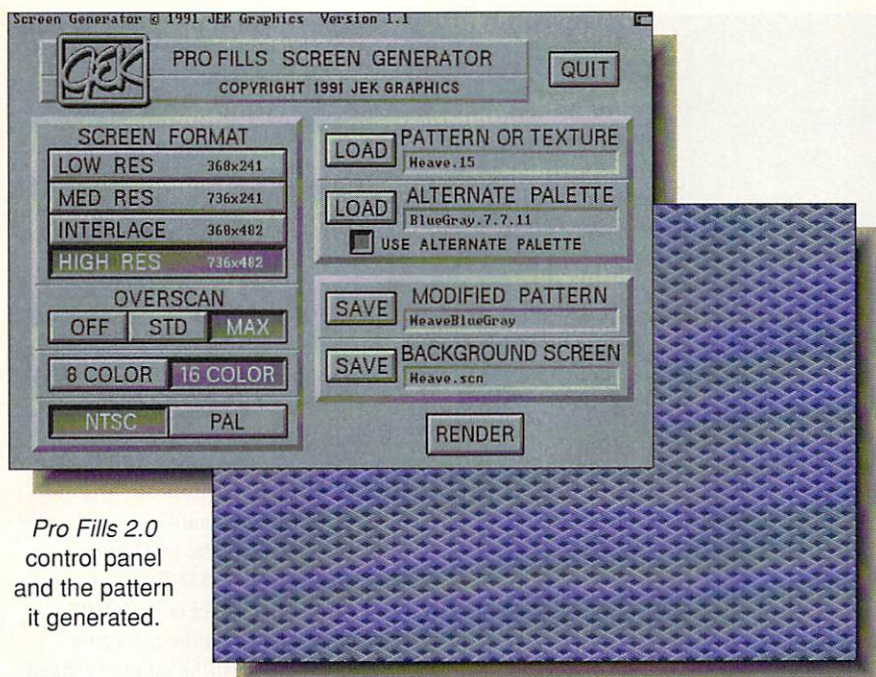
lum. If you swing a pendulum over a sandbox, the path drawn in the sand is a Lissajous curve. However, that pattern is only two-dimensional. If you take the same motion idea and apply it to a sphere, what you wind up with are the curves *Lissa* produces. Varying the starting points, length of the swing, and angles makes some very interesting shapes. \$35.00 from *Technical Tools*, 2 S 461 Cherice Drive, Warrenville, IL 60555. 708-393-6350. RS #209

CDTV DEVELOPMENT

Merit Software has a new video-based CDTV development system called **VidDISC**. They're not currently marketing it as a product, but rather as a service. From what we've seen, the multimedia applications produced with it are much more like those for CD-I than we've previously seen for CDTV. The possibilities for applications produced with *VidDISC* range from point-of-sale demonstrations to educational reference works to industrial training. Merit tells us that they will probably be marketing the development system itself in the future, but that for now, they're producing turn-key applications with it. The cost of an application ranges from about \$25,000 at the low end to upwards of \$200,000, depending on the amount of material provided to them and the type of work required to put it together. In the production process, Merit offers services such as content analysis, script writing and talent, audio/video production, foreign



Lissajous curves extruded and rendered as objects with *Technical Tools' Lissa*.



Pro Fills 2.0 control panel and the pattern it generated.

language translation, CD duplication, programming, and periodic updates to the application. This is the first such comprehensive service of this type we've seen for CDTV and we expect to see some killer applications come out of it. For more information, contact Merit Software, 13635 Gamma Road, Dallas, TX 75244. 214-385-2353. RS #220

SWITCHER

The switch from 1.3 to 2.0 Workbench has spawned a whole industry devoted to easing the transition. The latest is *Expert Services' SwitchStart ROM Adapter*. It's a low-cost (\$59.95) little board that plugs into the Kickstart ROM socket on the motherboard of an A500, A2000, or Rejuvenator-equipped A1000. The *SwitchStart* board has its own sockets for two Kickstart ROMs and there's a physical switch that installs on the outside of the computer's case for choosing which one you want to boot from. The manual has detailed instructions for installing the thing, but if you've never done any chip-pulling or installing, you should have a dealer do it for you. 5912 Centennial Circle, Florence, KY 41042. 606-371-9690. RS #210

FILLING UP

We were impressed with *JEK Graphics' Pro Fills* a couple of years ago and now the company has released a new 2.0 version of the background generation software. Rather than being just a collection of screens and patterns, **Pro Fills 2.0** is a standalone product with a slick, simple-to-use interface. There is a collection of textures and patterns to get you started, along with a very nice selection of palettes that can be applied to them. There are actually two sets of palettes, one for RGB displays and the other tailored for composite video. *Pro Fills* is very fast, rendering screens in only a couple of seconds, so you can do plenty of experimenting without wasting a lot of time. The results of your labors can be saved as standard IFF screens. \$49.95. 12103 South Brookhurst Street, Suite E-125, Garden Grove, CA 92642. 714-530-7603. RS #211

New Products now have Reader Service Numbers!

If you want more information on a product just look for the RS# and circle the corresponding Number on one of the Reader Service Cards.

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Turning your two dimensional world into 3D doesn't require special glasses. All you need is PIXEL 3D 2.0 and a little imagination.

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1221 East Center Street
Rochester, Minnesota 55904

Phone: (507)289-8677

Circle #113 on the
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NEWS & VIEWS



A sample screen from Virgin Games' *Guest* for MPC CD-ROM.



NOBLE CAUSE

We've always admired ASDG's products and now we have reason to admire their motives as well. The company has released an arcade game, *Ring-War*, as charity-ware. The idea is similar to the shareware concept, but instead of sending a fee to the author, ASDG is requesting that a contribution of \$10 be sent to one of three national charities: the American Cancer Society, the Muscular Dystrophy Association, or the American Red Cross. *Ring-Wars* was written by ASDG staffer Eric Bazan and is a space-based game in the "if it moves - shoot it" genre. It's available online and the addresses of the charities are listed in the opening credits. Kudos all around to ASDG, 925 Stewart Street, Madison, WI 53713. 608-273-6585.

GUEST AT CES

The single most impressive new thing at the January CES was *Guest*, a new game from Virgin. It's not available for Amiga (and it's uncertain whether it ever will be), but it's so revolutionary that we felt you ought to know about it. Designed for MPC CD-ROM (the IBM computer-based version of multimedia that some think will shut out CD-I and CDTV), *Guest* is the first fully raytraced, animated game ever. The game is enormous, occupying over 600 megabytes, and is an interactive horror story set in a creepy mansion. The SVGA graphics were rendered entirely

with *Autodesk 3D* and there are over 30 rooms in all. The real wonder of *Guest* is that as you move around a room, your viewpoint changes realistically, much as if you were viewing it through a video camera. The image shown here is a composite, showing on the right the wireframe that was used to model the room rendered on the left. *Guest* is a breakthrough game and only a hint of what will surely follow. For more information, contact Virgin Games at 18061 Fitch Avenue, Irvine, CA 92714. 714-833-8710.

EYECATCHER

Another eye-catching product at CES has nothing to do with computers, but it has everything to do with color and video. The *Telefire* is a sort of kaleidoscopic device that you hang in front of your TV (or monitor) screen where it produces colorful, ever-changing patterns. If you remember the *Mindlight 7*, this has something of the same effect, but is non-electronic. There are two models: the *Cubit 30* fits 19-21 inch TVs and sells for \$110, while the *Cubit 40* fits 25-30 inch screens and goes for \$140. The *Telefire* is from Western Light, 16 Madrone Park Circle, Mill Valley, CA 94941. 415-388-3030.

ACTIVISION NEWS

Just when we thought Activision was dead and gone (the parent company, Mediagenic, filed for bankruptcy pro-

tection in 1991), we now hear that they're resurrecting themselves and are starting to publish again. Among the first new Activision releases are *Sargon V* chess and *Shanghai II*. IBM versions will come first, of course. Activision also owns the Infocom label and will be releasing *Leather Goddesses of Phobos II*, the follow up to one of the best adventures ever. (The original *Leather Goddesses* even had a scratch 'n sniff card in the box. It was wonderfully vile.) We're pleased to hear all of this and we'll keep you posted on further developments.

HAM-E AND THE FCC

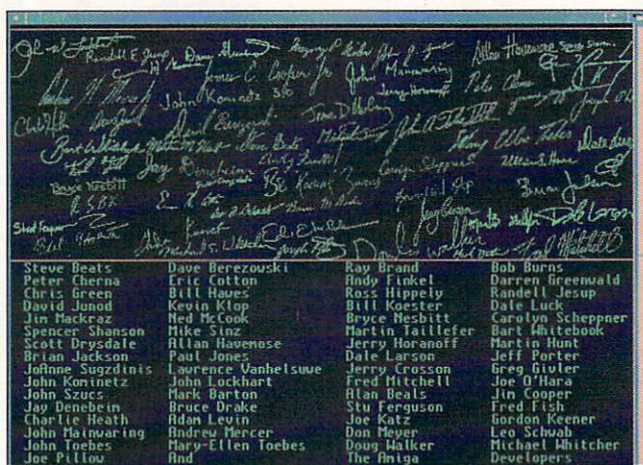
We've recently received some reader inquiries about the FCC status of Black Belt Systems' *HAM-E* box. A check of the FCC's Public Access Link BBS revealed the following note regarding FCCID #100-EHAM (the number affixed to the *HAM-E*): "Current status: Marketing prohibited. This FCC ID is invalid."

A call to the FCC representative in charge of this particular product revealed that Black Belt does not have an FCC certification for the *HAM-E*, nor do they have an application on file. The FCC rep told *.info*, "We have the ID in our database because we've been made aware that there is equipment out there with that ID on it. The ID is in our database for tracking purposes only." She added, "The company has been sent the usual notification that this is a violation." When asked if this would affect the marketing of the product, she answered, "The equipment is not authorized by the FCC. They are not supposed to sell this product without the issuance of an FCC grant. They are in violation of the rules and communications act, and the company is subject to fines and forfeitures under the act."

When contacted by *.info*, a spokesperson for Black Belt Systems told us, "We're not currently manufacturing [the *HAM-E*]. We haven't for months. It has to do with a non-disclosure agreement we've signed with Commodore. It has nothing to do with the FCC." The company would not elaborate beyond this statement.

So where does that leave the Amiga consumer? The point may be moot for Amiga

NEWS & VIEWS



The signatures of the developers of AmigaDos 2.04.

owners looking to buy a *HAM-E* now. It would be difficult to find one to purchase, since Black Belt says they are no longer manufacturing the unit. As for those who already own a *HAM-E*, FCC certification is probably not a major concern. Though it is the law that all electronic devices must obtain an FCC certification before being sold in the U.S., this is merely to ensure that those products meet the interference standards set by the government. If you own a *HAM-E* and it's not generating enough RFI to affect your TV and radio reception (or that of your neighbors) you can probably just forget about it. Our guess is that this situation will probably cause more problems for Black Belt Systems than it will for their customers. We don't envy anyone who has anything to hash out with Uncle Sam.

AMIGA CREDITS

If you ever opened the case of an Amiga 1000 and looked inside the top lid, what you saw were the signatures of the machine's creators molded into the plastic. We always thought that was a nice touch. Now we've learned that the tradition has been continued in an unexpected place. If you look on the new 2.04 Installation disk, you'll find a drawer called 'Tools.' Open it and then select 'Show All Files' from the Workbench Window menu. Another drawer called 'Test' will appear (you'll probably have to scroll the window over to the right to find it). Open it and you'll find a full-

screen-size icon made up of signatures; click on it and it resolves into a readable list. A tip of the *.info* chapeau to each and every person on the list.

SECRET MESSAGES

We'd heard rumors that 2.04 contained some secret messages, and now we've learned how to display them. The method is simple, but will probably require the use of three hands. First, click on the Workbench window to activate it. While holding down the CTRL, Left-Shift, Left-Alt, Right-Alt, and Right-Shift keys on the keyboard, use the right mousebutton to pull down the first Workbench menu and select any item. Release the mousebutton first, and then release all the keys on the keyboard. Finally, pull down the same menu and select 'Last Message' to read the secret message in the screen title bar. Repeat this sequence with all seven selections in the first menu bar; each has a different message. Isn't this fun?

AMIGA PIONEER DIES

We were saddened this month to learn of the death of a valued member of the original Amiga design team, one whose signature appeared inside the box lid of the A1000. After a long and happy life, Mitchie the dog has passed on. Our sincere condolences to his friend and owner, Jay Miner.

SPA REPORTS

We recently received two press releases from the Software Publishers Association. The first announced "Estimated 1990 Loss to Piracy in Western Europe \$4.3 Billion." The second, sent as a correction three days later, raised the figure to \$4.46 billion. While we do concede that piracy is a major problem both here in the US and in Europe, we do question the SPA's figures. There are lots of numbers in the SPA reports, but they are vague on the methods used to arrive at them. To quote from the reports, "The piracy estimates are conservative, because the units of software sold is compared to the number of personal computers purchased in the same year. This disregards sales to users of older personal computers. Assuming that some of the current year software is sold for use on older machines, the ratio of software and hardware sold would decline, thereby reflecting a much larger estimated loss of piracy." Besides being based on specious logic, the explanations are far too vague to be considered fact. We would estimate that the SPA's figures are not, as they claim, conservative, but hugely inflated. The bottom line is, of course, that nobody can ever know what the losses are for sure.

PRICE SLASHING

ICD, makers of all sorts of Amiga hardware, have announced price cuts on virtually their entire product line. For example, the *AdSpeed* accelerator now lists for \$209.96, the *Novia 20i* internal A500 hard drive is \$244.96, and the *Flicker Free Video* now retails for \$299.96. For details on other products, contact ICD at 1220 Rock Street, Rockford, IL 61101. 815-968-2228.

COMMODORE DISTRIBUTION

Commodore tells us they've signed an agreement with Miami-based Creative Equipment International to market Amigas and CDTV in Latin America and throughout the Caribbean. CEI is in the process of establishing a network of over 150 dealers throughout the region.

.info UPDATE

THE OOPS FILE

✓ In the Public Domain column in the February issue, Jeff Lowenthal misquoted the subscription price for *Enchanted Realms*, the adventure gaming magazine-on-disk. It really costs \$49.95 for a one-year, six-issue subscription with disk. Contact: Digital Expressions, PO Box 33656, Cleveland OH 44133, 216-582-0910.

✓ Last issue, we were incorrect in stating that the 68070 chip used in CD-I is from Motorola; it is actually manufactured by Signetics. However, we were right in stating that the chip is based on Motorola's 68000-family technology.

MOVES

✓ In the *WrapUp* for the same February issue, we printed an incorrect phone number for The Disc Company, publishers of *Harmoni*. The reason (okay, it's an excuse, but we'll do anything we can to weasel out of any blame) is that the company has recently moved. The new address is 11440 San Vicente Blvd., Los Angeles, CA 90049. The new phone numbers are 310-207-1600 voice, 310-820-8233 FAX.

✓ Digital Creations has moved to 160B Blue Ravine Road, Folsom, CA 95630. The phone number remains the same at 916-344-4825.

VERSIONS & REPAIRS

✓ You may have heard that there is a new version of ASDG's *Art Department Professional* on the way. It was originally intended to be a maintenance update, but ASDG is making it a much-enhanced release and numbering it 2.1.0. The PrefPrinter saver section of *ADPro* has eight new dithering methods added to it, so output even to dot matrix printers is much improved. There are also two entirely new features. FRED is an animation frame editor that lets you organize the individual frames, which are reduced to icon-size and arranged into lists which

can then be processed however you want with *ADPro* functions. FRED will also let you preview the animation before you output the frames to a single-frame recorder. FRED requires Kickstart 2.04 (the rest of *ADPro* will work under 1.3). Other new features in 2.1.0 are roll and broadcast limit operators. The former speeds up the creation of video transitions (like pushes, slides, and reveals), while the latter automatically corrects colors that can cause video problems. These broadcast limit operators can be based on NTSC, PAL, or user-defined parameters. The 2.1.0 update is free to registered owners of *ADPro* release 2 owners, and owners of version 1 can upgrade for \$75. If you're still back on the original *Art Department*, you can upgrade all the way to the top for \$130. ASDG also has a new release of their *Professional Conversion Pack* utility for reading and writing different graphic file formats. This latest version adds X11 and Sun formats, including alpha channel support for compositing operations. *PCP* sells for \$90 and owners of the previous version will be updated as a part of the new *ADPro* revision. 925 Stewart Street, Madison, WI 53713, 608-273-6585.

✓ Oxixi has released a new version of *Aegis Draw 2000*. Version 2.0 adds metric measurement, DXF in/out, parallel dimensioning, PAL support, a PostScript output option, and a whole slew of keyboard equivalents. A few bugs have been swatted along the way, too. Owners of previous versions should contact Oxixi for upgrade details. PO Box 90309, Long Beach, CA 90809, 213-427-1227.

✓ Deltaware tells us they've fixed a couple of minor glitches in their *A-Sound Elite* editing software. The incompatibility with Aegis' *SoundMaster* digitizer has been resolved (there was a problem toggling between microphone and RCA jacks) and a small problem in the record-to-disk function when using *Perfect Sound 3.0* has been fixed. The update will be sent for free to registered owners. 3148 Kingston Road,

Suite 202, Box 395, Toronto, ON Canada M1M 1P4, 416-431-2047.

✓ Bill Hawes, the undisputed guru of ARExx, tells us that his company, Wishful Thinking Development (one of the all-time best company names) has released a new version of *WShell*. Version 2.0 now has console window menus, command history with a scrollbar, iconic drag-and-drop operations for Workbench, and much more. *WShell 2.0* is specifically designed for Workbench 2.0, but will also work under 1.3 with a reduced set of capabilities. 2.0 sells for \$89. Contact Wishful Thinking for upgrade details. PO Box 308, Maynard, MA 01754.

✓ Poor Person Software has revised *Thinker*, their hypertext engine, to version 2.1.4. This latest incarnation can treat any CD-ROM database as a hypertext document, replacing searches with hypertext links. Contact PPS for more details on how that works - there are some interesting applications for it. *Thinker's* ARExx support has been extended and the user interface improved as well. *Thinker 2.1.4* retails for \$80 and registered owners can upgrade for \$15. A bargain. 3721 Starr King Circle, Palo Alto, CA 94306, 415-493-7234.

✓ There are several items from TTR Development. Their *Diamond Store 20* floptical drive system can now read and write 720K, 1.44 meg, and 20 meg disks using the OFS or FFS file systems. TTR's *WorkBench Management System* has been updated to version 3.0. This is a complete rewrite in assembly code and it now supports programmable menus, hotkeys, scripts, and other nifty things. Finally, the company has formed an arrangement with RCS Management for exclusive US distribution of RCS' *Fusion 40* 68040 accelerator. To even things out, RCS will be handling Canadian distribution of TTR's *Diamond Store 20*. 6701 Seybold Road, Madison, WI 53719, 608-277-8071.

Simple Speedup and Roll-Your-Own CD-ROM

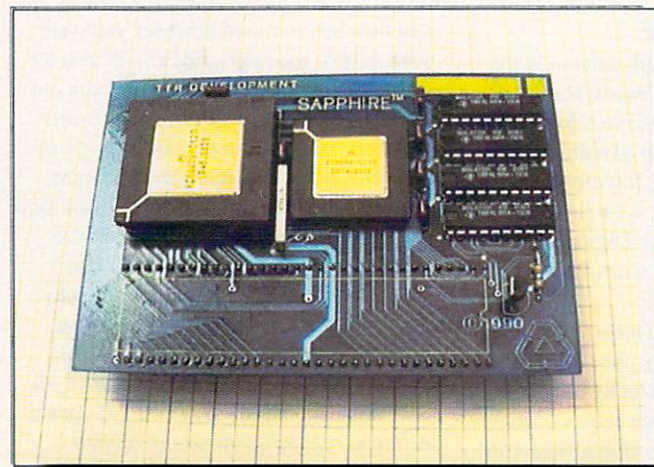


The typical Amiga developer, when presented with the Amiga's magnificence, has held back nothing. Applications such as raytracing or 3D modelling, which were never even attempted on eight-bit machines, have been routinely developed for the Amiga. Programs that originally ran on a cryogenically cooled Cray were ported with reckless abandon to the Amiga. It is no wonder that the poor Amiga seems to barely keep up at times.

More Speed

The solution is obvious: install an accelerator. Accelerators are typically a 68020 or 68030 microprocessor teamed up with a 68881/2 math coprocessor, with the clock speed cranked up to 12, 25, 33 Mhz or more. The latest accelerators are based on the 68040 microprocessor, which is a 68030 and a 68882 on one chip. The only problem with this approach is that the typical accelerator board costs more than the original computer. This is fine for the professional who can justify the added expense in exchange for increased productivity, but what about the rest of us? It turns out that those of us with modest means can also enjoy the benefits of more powerful processing. We just have to set our sights a little lower.

To start with, we settle for a 68020 microprocessor with a 68881 math coprocessor. Then we run the system at the same clock speed as the stock Amiga. This setup does not give spectacular results, but you



The plain, pure, and simple *Sapphire* accelerator board.

can expect to see between a 50% to a 100% improvement for many operations as a result of the increased efficiency of the 68020. It has an on-board RAM cache and it executes most instructions faster than the 68000. (Refer to Jim Butterfield's article in *.info* #42 for more on this.)

The concept of upgrading the microprocessor is by no means novel or unique. Way back in 1985, when the 68020 first appeared, Motorola encouraged developers to work with the new chip by developing a plug-in board that replaced the 68000 microprocessor with a 68020 and 68881. Up until 1988 or 1989, CSA still made and sold these "Piggyback Boards" directly to the Amiga community.

Compatibility with the 68020 is not generally a problem. There is only one instruction on the 68020 that behaves differently on the 68000. Developers have been aware of what is needed to write 68020/30 compatible code for years. Other than some games that were published during the first year of the Amiga's existence, there should be no commercial programs that cannot cope with a 68020.

Sapphire

With the *Sapphire* board, TTR Development has resurrected the original concept of the minimal accelerator plug-in board. In

fact, if you place a TTR *Sapphire* alongside the original CSA *Piggyback* board, you will notice a strong resemblance between the two.

Sapphire is a bit larger than three by four inches, with the square 68020/68881 processors mounted side by side. Four PAL chips, a transistor, and a handful of resistors and capacitors complete the component count. The version I looked at was designed for the Amiga 2000. Its main circuit board was connected to a smaller extender board that plugged into the 68000 socket. The package includes a floppy disk which contains the installation instructions and a disposable grounding wrist strap. The latter is used to ground yourself to the computer's chassis, thereby discharging any static electric charge that might damage the chips.

A Few Difficulties

I ran into some problems with the *Sapphire* board. The first board I tried repeatedly crashed the system about fifteen minutes after power up. TTR indicated that a batch of PAL chips had thermal problems and replaced the board. The replacement board operated erratically until I removed a pull-up resistor which had been installed in my Amiga 2000 to to eliminate compatibility problems I'd encountered with a memory board and a SCSI host adapter that

Sapphire



\$249.95

TTR Development

6701 Seybold Rd., Ste. 220
Madison, WI 53719
608-277-8071

are no longer a part of my system. Since I had a CSA Piggyback board on hand, I used it as a basis for comparison. The CSA board had no problems with the resistor in or out.

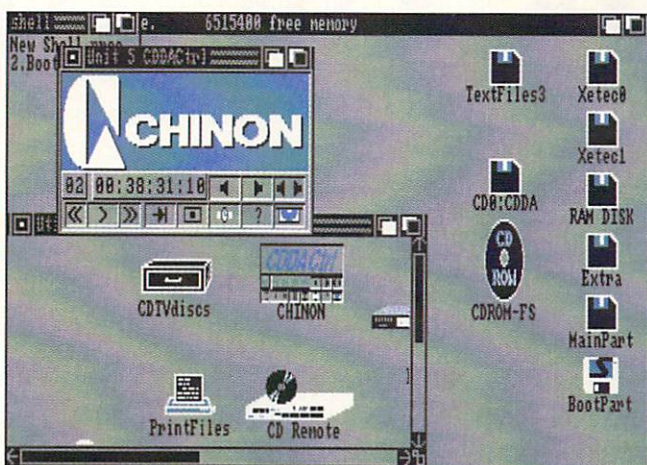
In my tests, I ran into two software compatibility problems with the *Sapphire*. The first was with the 68020 version of Natural Graphics' *Scenery Animator*, which simply crashed whenever I tried to load a data file. The second problem occurred when I attempted to revert back to ROM-based Kickstart 1.3 after using Commodore's RAM-based version of the Kickstart 2.0 ROM. Running the 'Killkick' program crashed the computer to the point that it had to be powered down before it would reboot. Neither of these problems occurred with the CSA Piggyback board.

Sapphire's 68020/68881 plug-in replacement concept is the least expensive way to install a math coprocessor in an Amiga system. With the exception of the two incidents mentioned above, the *Sapphire* board performed as expected. If you need a 68881 math coprocessor with a minimal investment, then the *Sapphire* is worth considering.

CD-ROM FS

Although CD-ROM drives are increasing in popularity among non-Amiga users, they are still relatively scarce as Amiga accessories. As of this time, you have three options when adding a CD-ROM to your system: CDTV (which doesn't really count, as it is a stand-alone product), the Xetec CD-ROM system, or you can roll your own. If you choose the latter course, you will have to assemble your own components starting with a SCSI host adapter and a hard drive at one end and a CD-ROM player at the other. You will also need a CD-ROM file system of some sort. The last requirement is not trivial. Although most CD-ROM players are SCSI peripherals, each one seems to have its own set of commands and idiosyncracies. Furthermore, the CD-ROM file system does not correspond to anything that the Amiga is used to seeing on a mass storage device. For example, CD-ROM data blocks are 2048 bytes, as compared to AmigaDOS's 512 bytes.

Two CD-ROM file systems are presently available to Amiga users; the Xetec system and *CDROM-FS*, which was developed by Canadian Prototype Replicas. The Xetec file system can be purchased for \$99. The package includes Xetec's CD-



The *CDDACtrl* program plays an audio CD via *CDROM-FS*.

ROM software and a copy of *Fish & More Volume 1*. Keep in mind that the Xetec system is only guaranteed to work with the Chinon CDX-431 CD-ROM drive, although Xetec has indicated that some users have reported successful results with other drives.

If for some reason you do not want a Chinon drive, then *CDROM-FS* is your only choice. The package consists of a floppy disk which contains the drivers that are installed in your L: and LIBS: directories. An icon-driven installation script automatically copies the files to all the right places. You complete the installation by modifying the CD-ROM mountlist so that it accesses your SCSI host adapter's driver and your CD-ROM player's SCSI ID number. The last step is to add a CD-ROM 'mount' command to the end of your startup-sequence file. This last step is important. When I tried to mount the CD-ROM from the CLI, the system crashed. The CD-ROM *must* be mounted from the startup-sequence.

The package includes an audio CD player program, *CDDACtrl*, which mimics the basic functions of a stand-alone audio CD player. *CDDACtrl's* extra features include user selection of tracks from an on-screen list and five time display modes.

The Test

I tested *CDROM-FS* on a Chinon CD-ROM player connected to a Xetec MiniFast card SCSI host adapter installed in an Amiga 2000. The system worked fine, with the exception of *CDDACtrl's* left/right audio channel selection. All I could get was stereo output. I was pleasantly surprised by the system's performance, inasmuch as

Canadian Prototype Replicas is very definite about the specific hardware that is supported, and my system was not on the 'official' list.

CDROM-FS version .701 complies to ISO9660 Level 2 Interchange, ISO9660 Level 1 Implementation, and HiSierra Level 2 CD-ROM specifications. Interleave files are not supported, and the block size must be 2048 bytes. The version tested was released on May 16, 1991, and may have been updated since then.

Officially, *CDROM-FS* supports the following CD-ROM drives with the Commodore A590, A2091, and A3000 SCSI controllers: Chinon CDX-431 (H42), Hitachi CDR-3650 (0006), Pioneer DRM-600 (0801), Sony CDU-541/6211 (2.6a) [incompatible with A3000], and Toshiba XM-3201B (3232). The Microbotics *Hard-Frame* works with all of these, as well as the NEC CDR-77,80,72,82 (000). Chinon and NEC drives require KickStart Version 37.128 or greater to work with an A3000. A ROM upgrade may be required for A590/A2091. [Numbers in parentheses are ROM versions.]

The Panasonic CD-ROM is currently untested, and the Toshiba XM-5100 and Hitachi CDR-1553 are known to be incompatible with the *CDDACtrl* program.

CDROM-FS



\$49.95

HyperMedia Concepts

5200 Washington Ave. Ste. 226
Racine, WI 53406
414-632-3766

Buy The Right Thing

by Arby Fuller

A little over a year ago, I had very interesting conversation with an Amiga developer who made the statement that the difference between European and American software buyers is that the Europeans buy only what they need to get the job done, while Americans buy software that does everything imaginable and with functions they can't possibly ever need. That distinction has stuck in the forefront of my mind as one of the Great Truths of Computing. (Another is that if the power is going to go off, it will always do so when I'm saving a file.) While it's wonderful to have software with every function under the sun, the downside is that the more functions there are, the higher the cost. Developers have to make a profit to stay in business; that's one of the immutable laws of the universe. And when users demand highly sophisticated, over-functional software, they are going to have

to pay for it. That's another unchanging law of the universe. All this has made me look at my own habits and to do some speculating on the entire US software market. We have always been a nation of heavy consumers; it's a major part of our ethic. We're taught from birth that more is always better. Now, though, I'm seriously questioning the idea as it applies to computing.

Being a computer user is a lot like being a two-year-old. All we know is 'gimme, gimme, gimme.' It doesn't matter if that new toy is going to sit in the closet somewhere and never be touched again. 'I want it and I want it now!' That was okay back when the toys I played with cost 59¢. Now the toys I play with are considerably more expensive, but I still have the same old attitude. But I'm trying to change it. And maybe it's time that you took a long, hard look at exactly what you're doing with your computer. Think about what you plan on doing with it in the future, what interests you and what doesn't, and then formulate a plan for software and hardware acquisitions. If you have a plan and stick to it, you can save enough money to buy those wonderful things you'd love to expand your system with.

The Amiga community has long been in a unique position. We consistently pay less for software and hardware than our counterparts who own Macs and IBM clones. However, as the Amiga becomes more and more mainstream, we're likely to see prices going up and commercial software becoming less and less accessible for home users. Let's take a look at some ways to get the most value from what you spend.

The Basic Home Setup

We're going to assume here a hardware setup that includes an Amiga 500, one external floppy drive, a medium-sized hard drive (let's say 40 megabytes), and one meg of RAM. This is a nice, functional system. We'll assume you don't have a printer yet, and before you buy one ask yourself whether you really need a printer. If you do any academic work, the answer will be 'yes' and 'sooner' rather than 'later.' But if all you intend to do is to print a few letters to relatives, a printer should probably be a long way down on your list of priorities. One tendency you'll have to fight if you're a newcomer to computing is that you're used to reading everything on paper; you need to train yourself to do your reading on-screen instead. You'll even save a few trees in the process. We'll get back to the printer issue a little later.

Most people think they immediately need four basic things in their home software libraries: a wordprocessor, a spreadsheet, a database manager, and a paint program. Maybe, maybe not. First, assess your needs. Chances are that you don't really need more than one or two of these products. There are alternatives.

Wordprocessors are as personal as toothbrushes. They're also considerably more expensive. There are three basic flavors: text editors, text-only wordprocessors with print functions, and wordprocessors with graphics capabilities. As in everything else, ask yourself what kind of writing you're going to do. If you're only going to write letters, edit your startup-sequence, and knock off a few paragraphs of notes, then you don't need a wordprocessor at all. You can get by handily with a public domain text editor. At the opposite end of the scale,



Searching for interesting (and free!) Fish Disk applications with Aquarium.

if you write complicated reports, long pieces of text with indexes and footnotes, or documents that need elaborate formatting, you'll need either a combination of a wordprocessor and page layout software or a heavyweight wordprocessor like *Word-Perfect* (\$250). Chances are, though, that your needs fall somewhere in the middle. Then there are two paths to take. If you don't need to include graphics or use a variety of fonts, something like Gold Disk's *TransWrite* (\$69.95) is what you need. It will give you good, fast editing with adequate print features. If you do need graphic and font capability, then I would recommend New Horizons' *ProWrite*, Soft-Wood's *Final Copy* (\$99.95) or - particularly if you need foreign language capability - Centaur's *Personal Write* (\$49.95).

[Editor's Note: The examples given in this article are just that: examples. There are many other excellent Amiga products available that would also meet your needs.]

Commercial spreadsheets and database managers are luxuries for most people. Unless you're doing complex financial planning and maintaining a mailing list with order tracking information, there are public domain utilities that will probably do what you need faster and more easily. Spreadsheets are enormously complex creatures, and to use one for balancing your checkbook or planning a home budget is overkill. The same goes for database managers. If you're simply cataloging your CD collection, then buying *Superbase Professional* and spending the time to learn it and program it is probably a waste of both time and money.

But there is one product you do need to buy immediately: *Deluxe Paint IV*. No Amiga should be without it. It is the definitive paint program, and if you have any appreciation at all for your Amiga's ability to display color, you just can't be without it. Even if you're not an artist, you'll find lots of practical uses for *DPaint*. It can handle simple video titling, animation, and even some 'multimedia' duty.

Upping the Ante

I've mentioned public domain software a couple of times now and that's the next thing we need to consider. The Amiga has an enormous amount of PD software available for it and there are two ways to go about obtaining it: downloading or buying individual disks. There are a number of PD vendors who sell disks of PD software at \$2 a disk on up. This is unquestionably the best way to start out. The vendors have already gone through the effort of sorting



Creating a video title animation with *Deluxe Paint IV*.

out and categorizing the programs. They usually have catalogs that include descriptions, making the process of finding what you want much easier.

The champion compiler of Amiga PD software is, of course, Fred Fish. He has produced, as of this writing, over 580 disks full of PD software and Shareware. In fact, he is so prolific and has been doing this for so long that most Amiga PD software is commonly referred to by the number of the Fish Disk that contains it. The best way to explore the contents of these disks is by using the PD Fish Disk database program *Aquarium*, which is itself on Fish Disk #559. We suggest you pick up a copy of this program and set yourself looking through the thousands of programs that are available in the Fish Disk series.

If you find that PD software fills your needs, you'll probably eventually want to start downloading the stuff from a BBS or one of the online services. To do that, you'll need a modem and telecommunications software. Before you get into it, though, weigh the costs very carefully. A 2400-baud modem will set you back between \$100 and \$200. You can get modems that are faster, but there are so few services that support speeds higher than 2400 that it's really not worth the extra expense. Don't even think about buying commercial telecommunications software, at least at first; there are abundant PD titles available and most are excellent. Here at *.info*, we use COMM and VLT, both PD and more than adequate for our needs. On top of the modem, you will also have to decide whether you want to use one (or more) of the commercial online services such as Portal, GENie, CompuServe, BIX, and so on. The prices these companies charge for connect time, downloads, and

other services has been coming down steadily and I think we can expect them to come down even more in the future. The courts have recently ruled that phone companies can now provide information services, something they had been prohibited from doing after the breakup of Ma Bell. That means more competition and lower prices for us. Local bulletin boards (BBSs) frequently have good software collections, though it may take a good deal of searching to find one you like that has the software you want, and isn't so highly specialized that it will be of minimal use. BBSs are also hard to come by in rural areas; you can wind up spending a fortune in long-distance charges unless you have access to something like Tymnet or PC Pursuit. The advantages to using one of the commercial networks are that you'll have access to the latest PD titles, you can take advantage of additional services BBSs can't offer, you can be assured that what you're downloading is virus-free and not pirated, and you can download individual titles rather than ordering a PD disk that may contain things you don't want. Before you get into telecommunications, investigate the complete cost, including the modem, connect time, download surcharges, and phone charges. Compare this with the cost of commercial PD disks.

Perhaps the best source of PD software is your local Amiga user group. If there's one in your area, you'll find that one of its most useful services is its library of PD disks. These are usually available for copying just for the price of a blank disk.

Getting Into Video

Video isn't cheap. It requires hardware, sophisticated software, and more hardware. The one basic hardware requirement for

Amiga video work is a genlock. There are a number of them on the market, though many are priced out of the reach of the average home user. The first thing to do is check around for a used one. Failing that, you'll have to bite the bullet and buy a new one. This is another case of balancing price and performance. Don't buy more genlock than you absolutely need. For home use, a box with video-in and composite-out is all that's really required. Creative use of software can make up for most of the functions of more sophisticated devices. *DPaint* can take the place of titling software; all you need to do is create an animation with the background set to 'Color 0' and enter the text on individual frames. Wipes and dissolves can be simulated with full-screen images. You can do your editing by hand. It may not be perfect, but for most things it's perfectly acceptable. There really isn't much PD video software available, though there are a few titles appearing. There are lots of commercial video utilities, but they're usually expensive and aimed at the video professional. A notable exception is Gold Disk's new *Video Director*. It's designed to work with consumer-grade video equipment and its \$199.95 retail price may bend your budget a little, but won't break it. Again, analyze exactly what you need to do and base your decision on that, not what dazzles you.

Getting Into Print

A printer is one of the most expensive additions you're likely to make to your system. There are so many on the market that picking the right one for your needs is next to impossible. A laser printer will give you the best output, but it's also far beyond the financial reach of most home users. If you're moonlighting with some desktop publishing, then give a PostScript printer some thought, though even then it would be wise to investigate renting or leasing instead of buying. There are real bargains in dot matrix printers, but their print quality leaves much to be desired, particularly those at the lowest end. As I said above, try to train yourself to do without hardcopy printouts of program listings, directories, and other disposable print. It's not just ecologically better to not waste a bunch of paper on printouts that will be looked at once or twice and then thrown away, it's also much cheaper to read such things onscreen. If you decide you really do need a high quality printer, the HP DeskJet is probably your best bet. You'll pay only slightly more for one than for an impact dot-matrix printer, and you'll get output that compares very favorably to laser print. With the right software, like the public domain interpreter *Post*, you can even have PostScript capability.

Getting By With Less

You can't always get what you want... To paraphrase Mick Jagger, you generally get what you need if you're willing to do enough work. Learning to do more with less is a highly creative process. You may have to sacrifice some time, but you'll save money in the long run. What all this means is that commercial software developers have only responded to what users have demanded. If we stop insisting on huge numbers of gee-whiz features that we'll only rarely or never use, then developers can concentrate more of their efforts on making the basic software better, more reliable, and easier to use. The more complicated a piece of software is, the more likely it is that something will go wrong. I'm not saying that you shouldn't buy commercial software, because you should. But evaluate your needs first. By making do with capable but less than full-featured software in one area, you can often save enough to allow you to buy something better than you ordinarily would for another area of your computing. Buy commercial, but buy smart. Use your Amiga, don't let it use you.

Things to do Before You Buy, and One After

- Make a list of exactly what you use your computer for and the software you do it with.
- Make another list of what you would like to be able to do with your machine and the software you would like to use to do it.
- Ask yourself if anything from the first list can be adapted to accomplish what's on the second.
- Is there any PD software available that can be used for making things on the first list easier, and the items on the second list possible?
- If you're thinking about replacing one application with another one, ask yourself if the new title will give you a real advantage in time or capability, or whether you just want it because it's new.
- Think about the staying power of whatever you're considering buying. Realistically, will you still be using it on a regular basis six months from now?
- Do you know precisely what a new piece of software does and exactly how it can be used for what you want to do? Don't buy something for only one function without exhaustive checking to find out if there's another way to do it. Write to the publisher to get all the available information on the product. (Reader service cards are one way to simplify getting the information.)
- Have you comparison shopped? Are you buying at the best price and from the best source? If you think you're going to need help, especially if what you're buying is hardware, buy from a dealer. If you're reasonably certain you won't need any help, mail-order can save you money.
- Don't buy on impulse. If you see something you think you have to have, force yourself to wait at least 24 hours.
- Learn the intimate details of what you do buy. Learning to use software well will often reveal alternative uses and expand its value.

Scala 500

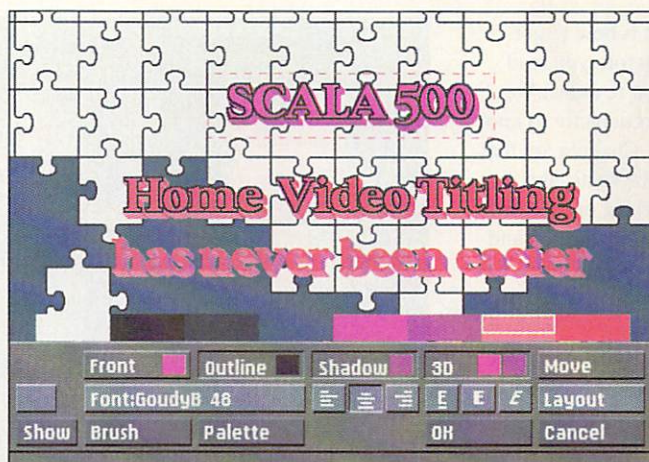
by Tom Malcom

Scala is one of the more impressive video titling products on the market, but its \$395 pricetag and memory requirements have kept it limited to the professional audience. Digital Visions, the European developer, has now released *Scala 500*, a scaled-down version for the rest of us. It's likely to be the only video titler you'll use until you get your new video studio built out in the backyard and then learn how to use it.

I have to emphasize here that *Scala 500* is for home users and it possesses the usually scarce virtues of simplicity, utility, and quality. It's not designed to be used in a professional environment, but it is far and away the best titler I've seen for home use. While video titling is the primary use for *Scala 500*, it can also be used to create slideshows and presentations. (It lacks the animation support and interactive features of its older sibling, but most people don't need or want them.)

Scala 500 is a page-based system, meaning that you create a series of separate screens containing text and/or graphics which are chained together into a complete presentation. The layout of the program is logical and simple: you first choose a background (which can also be transparent if you're using a genlock), enter the text you want to appear on it, choose a transition to the next screen, and then repeat the process. *Scala 500* comes with two disks of backgrounds, graphics, and fonts to get you started. This is the only disappointment I had with *Scala 500* - the backdrops for the original *Scala* are far better and I'd like to see GVP make them available separately or as an upgrade.

Text handling is the easiest and most versatile I've seen in a titling package. There are four fonts designed for video use



For amateur videographers, I can't recommend *Scala 500* highly enough.

included in the package, though I've had no trouble using any of the bitmap fonts in my collection. The program will also resize fonts and while it does it quite well, this version of *Scala* doesn't support anti-aliasing, so you may run into some jaggedness. Some care in font and color selection will minimize any problems, though. Entering the text is just like using a wordprocessor, with settable margins, justification, and automatic wordwrap. If you need to, the cursor can be repositioned with a mouseclick.

There's a pop-up menu for configuring dropshadows, 3D effects, text attributes, and outlines however you want and the changes you make take effect immediately. Changing color is as easy as clicking on a palette bar, which is always onscreen and accessible. You can import brushes to drop onto the screen, though it took me a few minutes (and the only trip I had to make to the finely done manual) to figure out how to get text to overlay a graphic, but that's easy, too. Both lines of text and the graphics are actually in boxes onscreen and the boxes can be made visible to make it easier to drag them around the screen if you need to adjust the positions more precisely. It's so easy and fast to lay in graphics and enter and edit text, though, that I usually just start over if I don't like the way a page turned out.

Once you have the page finished, a mouseclick adds it to the master list, where you can add a transition to the next page and a timing delay if you want one. If you

need to, the pages can be easily rearranged just by dragging them around in the list. The choices for transitions are excellent, among the best and most visually interesting this side of the Toaster. After you've created a series of pages, you can then tell *Scala 500* to run the whole presentation; it can be run either automatically from the timing information you've provided or advanced from one page to the next with a mouseclick, which makes it especially easy to genlock text exactly when you want over video. That brings me to another of *Scala 500*'s primary virtues: it is extremely fast. You don't have to wait around twiddling your thumbs while it renders a screen. If you want to, you can slam them in nearly as fast as you can click the mouse. There's also provision for continuous text scrolling, though it requires you to enter the text by hand on a series of screens and then set it in motion. I'd rather be able to import a text file, but the editing functions are easy enough to use that I don't mind.

For video amateurs like me, *Scala 500* is the perfect video titler. It lets me get the job done with a minimum of effort and has enough snappy features to add some flash to the finished production. It is one of those rare pieces of software that is always polite and considerate of the user. It makes my video look professional with neither the pricetag nor the aggravation of learning a do-it-all titling package. For amateur videographers, I can't recommend *Scala 500* highly enough.

Scala 500

☆☆☆☆☆

\$149.00

GVP

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215-337-8770

Knit Editor

by Tom Malcom

What this review is about is how to get yourself a free sweater. Before you read any further, make sure you're alone. We don't want our intended benefactor to know what we're up to just yet. Chances are that you live with someone who knits, are related to someone who knits, or at least know someone who knits. If you stop and think about it, computer displays and sweaters have a lot in common. Screens are made up of individual pixels and sweaters are made of lots of individual stitches; the correlation is clear. The problem is simply translating one to the other. You can come up with all kinds of nifty designs on-screen, but getting them into sweater format is a little trickier. That's where Cochenille's *Knit Editor* comes in. It will let you take any lo-res IFF screen or brush and perform the necessary operations on it to convert it into something our intended victi . . . I mean knitter can make you a sweater from.

The basic operation starts with importing a graphic to work on. It must be an IFF lo-res image in 32 colors or less. The first thing *Knit Editor* does is reduce the number of colors to a manageable level. (Changing yarn color isn't quite as easy as picking a new color from a palette requester.) Projects are going to be much easier if you design the initial graphic in only 4 or 8 colors. *Knit Editor* can handle up to 20 colors, but most knitters can't. Once the color reduction is done (and it works quite well) *Knit Editor* pixelizes the image based on the stitch size you specify. A smaller stitch size means more detail, but more work for the finished project. You'll want to check

with your knitter to find out what gauge (stitch size) to use. At this point, you can adjust the palette for the color scheme you want and then print the result as a symbolic chart. These charts are what the knitter uses to make the sweater, with each symbol representing a different color of yarn. For some strange reason, this seems to work much better than a color chart. The entire process, from loading the graphic to printing the result, takes a couple of minutes. However, our knitter doesn't need to know that. Let's make it seem like a long, hard process so we can get a little sympathy and make our knitter a little more likely to swallow our bait. That bait is that if our knitter will make us a sweater, we'll design another one to the knitter's own specifications *for free!* Is that underhanded or what? Of course it is, but here I am wearing my nice new sweater with the .info logo and

I'm not a bit ashamed of what I've done.

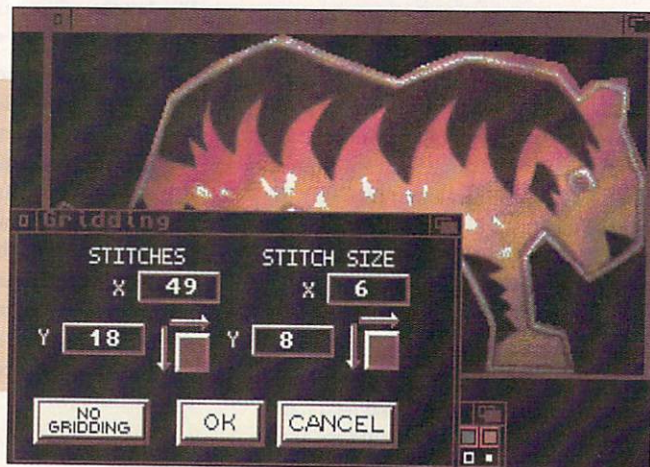
Knit Editor is a little awkward to use at times. The file requester is old-fashioned and an image cropping function is sorely needed, but overall it does get the job done and it does it accurately, which is the most important thing. Cochenille also has a couple of other products designed to aid in the knit design process. The first is a tutorial book, *Designing Knits on Your Home Computer* (\$28), with an accompanying disk. It's very well done, thorough, and filled with practical examples. At the high end, there's also *Bit Knitter* (\$499), which consists of software and an interface that will let you hook your Amiga directly to an electronic knitting machine and drive it directly from your on-screen design. If we can work our little con job on someone with one of these, we can score a whole new wardrobe of sweaters.

One last thing - if you tell my mother about what I've done, I'll find out where you live and I won't show any mercy.



Composite screen showing the raw graphic, gridded image, and palette/symbol map.

Requester for adjusting stitch size.



KNIT EDITOR

☆☆☆+

\$110.00

Cochenille Computer
Knit Products

PO Box 4276

Encinitas, CA 92024

619-942-1957

DeskJet 500C

by Mark R. Brown

This printer looks like a *DeskJet 500*, and if you plug a black ink cartridge into it, it acts like a *DeskJet 500*. But if you plug in a three-color cartridge, it becomes a color printer with an incredible price/performance ratio.

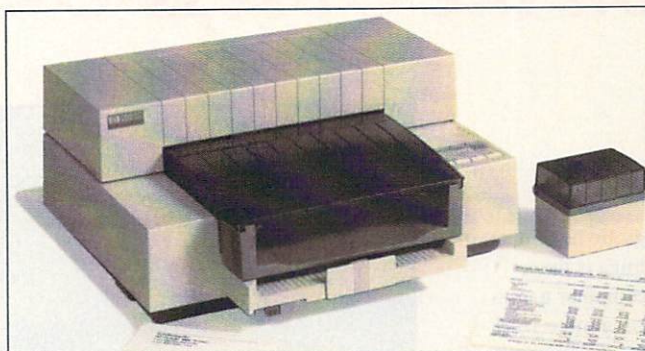
Hewlett-Packard's *DeskJet 500C* has a list price of \$1095, but we've seen it selling as low as \$695. That's the cost of a black-and-white laser printer with the same 300 dpi print resolution. So if you've got seven hundred bucks to spend on a printer, now you've got two 300 dpi choices: b&w laser or color inkjet.

I've always thought that the original *DeskJet 500*'s output was superb when you compared it to the output from a laser printer costing more than twice as much. When you consider that the *500C* delivers 300 dpi in color for about 1/10 the price of a color laser printer, it is even more of a bargain.

Output

With either of the *DeskJet* printers, you may notice an occasional slight banding that you wouldn't see in a laser printer's output. But this is barely noticeable, and can be optimized using Amiga Preference controls for 'shingling.' This - and faster throughput - is what you're paying the extra money for when you buy a laser printer.

The *DeskJet 500C*'s color is excellent, with bright yellows and reds and brilliant blues and greens. Output on standard laser paper is good, though we got much better results with clay-coated *PaintJet* paper. We



Hewlett-Packard's impressive new 300 dpi color inkjet printer, the *DeskJet 500C*.

recommend the former for proofing and the latter for high-quality final output. At 300 dpi, it's almost impossible to see the color dithering that produces so many colors from just three inkjets. Yes, I said three. The *500C* is a CYM printer, not CYMK like Hewlett-Packard's lower-resolution 180 dpi *PaintJet*. This means that when you use the color cartridge the image is built up of cyan, yellow, and magenta inks, with no black. Black is created using a combination of all three inks. Ink buildup in dark areas thus becomes a concern, and blacks are something more like a deep, dark brown than a true black. This was one of our major concerns before we unpacked the *500C*; we didn't think we'd be satisfied with the results. But the printer fooled us, producing very acceptable dark shades. There is some tendency to 'muddy up' in dark areas, and the blacks are not as black as we'd like, but the overall quality of the output has exceeded our expectations. We've been using the *DeskJet 500C* for color proofing with very good results. We still believe in the superiority of CYMK output, and eagerly await a color *DeskJet* printer with four inks instead of three. But until that day comes, the *500C* does a very good job.

Software Drivers

Of course, the capabilities of the printer are nothing without Amiga Preferences support. And support for the *DeskJet 500C* is being provided both by Commodore and by Creative Focus. Commodore's new *DeskJet* printer driver (we were still using a beta version as this review went to press) includes many new options for the *500C*, including control of shingling, or how much overlap there is in printed lines. Get-

ting decent color printouts relies heavily on how your software calculates the output, as well as the combination of a great many settings in Preferences. The settings are much more complex than they are for a monochrome printer, and some of the selection buttons are used in non-standard ways. But, as the *HP_500C* driver documentation says: "Basically, set threshold to 10, density to 7, dither to halftone, turn red color correction OFF, green and blue color correction ON, and forget about it. Graphics will print out great all the time." Though this is a bit optimistic, in general it seemed to work well.

But we got even better results with the beta version of a more ambitious printer driver from Creative Focus. Though the *Super_DJC* driver will cost you money, it offers a great deal more control over the printer. This means, among other things, that the Preferences controls do even more non-standard things than the Commodore driver. So with either of these drivers it's extremely important to know what that button, slider, or gadget really does before you touch it. Benn tried both drivers with *Professional Page*, *Deluxe Paint IV*, and *Art Dept. Professional 2.0*, and came away a believer in the Creative Focus driver. Though the Commodore driver worked just fine, the Creative Focus driver really shows off the *DeskJet 500C* in its best light.

What to Buy?

So should you get a *500C* or a laser printer? If you bought your Amiga for its color capabilities and have been anxious to get the same high quality color in your printouts that you get on your screen, then the *DeskJet 500C* is what you've been waiting for.

HP DeskJet 500C



\$1095.00

Hewlett-Packard

16399 W. Bernardo Dr.
San Diego CA 92127
800-752-0900

Super_DJC



\$50 (introductory: \$35)

Creative Focus

PO Box 580
Chenango Bridge NY 13745

Sequels, Returns, and a Trip on the Obsess-O-Matic



Things are heating up in Amiga gaming. The Amiga is the number-two platform in computer games and publishers are converting more IBM games to Amiga format and they're doing it much sooner than in the past couple of years. Isn't respectability (and profitability) a wonderful thing? This month's games are a mixed bag: everything from the return of our favorite polyester-clad dweeb to a trip to Middle Earth to the verge of an obsessive/compulsive disorder with a seemingly simple little boardgame.

LEISURE SUIT LARRY 5



Sierra
PO Box 485
Coarsegold, CA 93614
209-683-6858

The ultimate dork is back and I'm surprised at how much I've missed him. Larry Laffer and Passionate Patti are back in the first new adventure I've seen from Sierra in quite a while. This one, subtitled *Passionate Patti Does a Little Undercover Work*, is just as vulgar, as filled with double-entendres, and as uproariously funny as the earlier entries in the series. In fact, I think this is the funniest of the lot. The plot has Larry working in Hollywood for a game show called *America's Sexiest Home Videos*, whose producer sends him off to check out the three candidates for the show's hostess job. The game skewers the entertainment industry with some deliciously on-target jabs and even takes a few swipes at computer games, including Sierra's own, in the process. (There is, by the way, no *LSL 4*, but you'll have to see *LSL 5* to find out why.)

In the past, I've criticized Sierra for their poor graphics and interminably slow play. Well, I have good news and bad news. The graphics are considerably better than in anything I've seen from Sierra. They're up



Larry's back and as obnoxious as ever in Sierra's *Leisure Suit Larry 5*.

to using 32 colors now, and while there's still some IBM-type dithering, the overall look is more artful than before. What used to come across as amateurish has evolved into much more of a style. It's cartoony, but effective. The music and sound effects are top-notch and one of my favorite bits was finding Larry's 8-track tape player (he's having a little trouble finding new cartridges for the thing), which lets you play different pieces of music from the game. The bad news is that the game speed still isn't nearly what it should be. The animation is improved, and many of the characters have distinctive walks that will have you rolling on the floor in laughter, but they still don't move fast enough. The biggest problem, though, is the long wait between scenes. There have even been a few occasions when the game just hangs while loading a scene, requiring either a reboot or reloading a saved game.

Sierra's most radical change with this release is the elimination of any typing. All action is now accomplished via smart icons and pointing and clicking. You can still use the keyboard for movement, though I can't imagine why anyone would want to. The system works quite well, though I did run

across an occasional instance where the game either refused to respond or responded inappropriately. However, these were minor annoyances and I was able to restore a saved game and continue on. I think as Sierra refines the interface, it will become one of the better game control systems around.

Much as I enjoyed *LSL 5*, it's really less of a game than a semi-interactive comic book. There are very long sections that involve no interaction at all; they're mostly expository and while they are funny and entertaining, they should have been accelerated considerably. The one thing I love most about the game is the fact that it doesn't take itself (or Sierra, for that matter) seriously. Its primary purpose is to give the player a few good yuks and it succeeds splendidly at it. The writers aren't afraid to use every cheap, vulgar joke they can work in and I admire them for it. (By the way, since this is very definitely an adult game and if you're worried about your kids getting into it, there's optional password protection.) Dig out your gold chains, run your polyester disco suit through the washer, and join Larry and Patti for some laughs. It's worth the effort.

Incredible



Very Good



Average



Poor



Drek



CELTIC LEGENDS



UBISoft/EA
1450 Fashion Island Blvd.
San Mateo, CA 94404
415-571-7171

I don't know where UBISoft found Pierre Fallard, the artist who did *Celtic Legends*, but I hope they had the foresight to sign him to a long-term contract. His work is marvelous, highly detailed, and beautifully stylized in the Celtic manner. A few months ago, UBISoft released *Battle Isle*, an unusually well done hex-grid wargame. *Celtic Legends* is a variation on that theme. It's still basically a hex-grid game, but instead of tanks and howitzers, your armaments consist of magic spells. It's highly interesting and probably the best hex-grid game I've ever seen. It's easy to get the hang of, plays at a reasonably fast clip, and has enough depth to keep you coming back for more. Control is mostly via icons and I found that the whole interface quickly became transparent.

With *Celtic Legends*, I think UBISoft has found a way to bring strategy/wargaming into mainstream gaming. Until now, I've always found the genre rather dry, but *Celtic Legends* adds so much pizzazz and polish that I may become a convert.

LEANDER



Psygnosis
29 Saint Mary's Court
Brookline, MA 02146
617-731-3553

I'm starting to really hate Psygnosis. They release a continual stream of new games and, being the weak-willed soul that



Waging a battle of spells (and wits) in UBISoft's *Celtic Legends*.

I am, I have to boot them up immediately. The next thing I know, it's three o'clock in the morning, the dog has been squirming and whining to go out for the last six hours (so have I, for that matter), my back hurts from sitting in the same position for so long, and I can't pry my atrophied fingers from the joystick without a crowbar. I hate it.

I've been hating *Leander* for a couple of weeks now. I've only made it to the fifth level, but it's one of those games that won't let me rest until I've finished it. While it isn't on a par with *Beast* or *Awesome*, *Leander* is a very fine arcade adventure with typically perfect Psygnosis graphics. It has a Japanese flavor to it (there are even Japanese characters on the cover) and it fairly screams 'Super Nintendo,' which is doubtless where it will wind up. There's the usual plot about rescuing a princess from some evil creature, but as is the way with these games, the plot is irrelevant. The play is everything.

While *Leander* is one of Psygnosis' most accessible releases, it also has some of their old, unlamented quirks like atomic copy protection and no save option. There's an initial configuration menu that will let you select from several difficulty levels and set other options, giving beginners the opportunity to learn how things work. *Leander* uses code words rather than having a save function, but they aren't given often enough. Much as I like playing *Leander*, I'm really tired of the first four levels since I've had to fight my way through them every time I want to try the fifth.

If only Psygnosis would do a bad game now and then! I wouldn't be in so much pain, the dog might like me again, and I would have enough time to write reviews. Naaah! I'd rather play Psygnosis games.

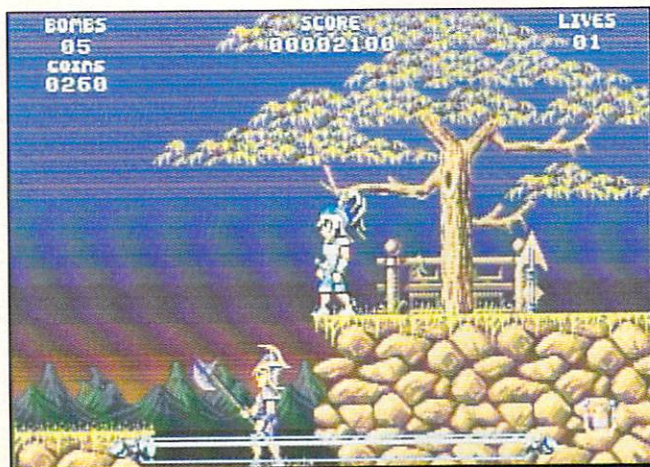
OH NO! MORE LEMMINGS



Psygnosis
29 Saint Mary's Court
Brookline, MA 02146
617-731-3553

What I just said in the review of *Leander* about hating Psygnosis goes double for *Oh No! More Lemmings*. I've been saving these little dweebs for months now and they *still* haven't learned not to go jumping off cliffs. I suppose I'll just have to keep on saving them. Sigh.

Oh No! is available in two versions, one a stand-alone and the other an add-on disk that requires the original *Lemmings*. There are 100 new screens to solve and they have the same range of difficulty as the originals. Overall, these new levels are even better than the first set. I think that's probably because the designers have had more time



Another Psygnosis time-eater, *Leander* is in the Super-NES arcade adventure vein.

Take a journey into heavy game addiction with TTR's *Thromulus*.



to create them and have also had a year's worth of feedback from players. At any rate, if you're a *Lemmings* fan, *Oh No!* is an absolute requirement for your collection.

Lemmings has made Psygnosis the reigning superstar of the gaming firmament and they, in turn, are taking full advantage of it with all kinds of keen marketing toys. The .info offices are decked out in cutout stand-up lemming, I wear a *Lemmings* tee shirt most of the time, and it won't be long before there are stuffed lemmings sitting all over the place. It couldn't happen to a nicer bunch of little green-haired critters. By the way, if you look around you may still be able to find the freely distributable *Lemmings Christmas Demo*. The guys wear, of course, little Santa hats and there's a Christmas music soundtrack. Put it in with your Christmas decorations and pull it out next holiday season for some smiles.

THROMULUS



TTR Development
6701 Seybold Road
Madison, WI 53719
608-277-8071

At first, I thought *Thromulus* was just another derivative of *Reversi* or a quick *Spot* knockoff, but sometime around the fourth straight hour with it, I decided it was a pretty good game on its own. By the seventh hour, I was debating what to erase from my hard drive to make room for it and by the tenth, with my Saturday completely wasted, I finally summoned up my last tiny shred of willpower and turned off the Obsess-O-Matic. Well, Okay, I did play another 10 one-last-games, but then I turned it right off. I can turn it off anytime I

want.

On the surface, *Thromulus* is in the same family of games as *Othello* and *Spot*, but in some ways I like it much better. The rules are very simple: you place a playing piece on a grid and all the adjacent pieces, including the diagonals, become yours. It's a vicious game of strategy and there are enough variations and options to give it depth. Usually, I get bored with games like this fairly soon, but being able to play a nearly unlimited series of different boards and add several types of obstacles provide enough variety within the framework of the game to make it one to keep coming back for more sessions. Player conveniences haven't been overlooked, either. You can save a game in progress, save and load boards you're particularly fond of, and design your own layouts. The program will also generate random boards for you.

There are some things about *Thromulus* I don't like. I get tired of the same red and blue colors. There's a legitimate reason for

it, having to do with the game being set within the metaphor of blood cells and viruses, but because the game is good enough without the setting, I'd like to be able to use different graphics. In flipping through screens, I ran across the graphics for the board and playing pieces laid out in what looked like a DPaint screen, so it would be a simple matter to let the player load in a substitute. (I tried loading the default into DPaint, but was told it was a mangled IFF.) I'd also rather not have to wait through the title screen after finishing a game - I'm obsessed with it and I want to play again *right now*, not in fifteen seconds.

I didn't expect to like *Thromulus* as much as I do. It's a game I'll keep on my hard drive permanently and I don't do that with many of them. I'd like to see TTR release additional boards or a version that will let you load boards and pieces of your own design. On second thought, I hope they don't. I'd never get anything else done.

HOME ALONE



Capstone/Intracorp
14202 SW 136th Street
Miami, FL 33186
305-252-9040

While it's absolutely no fault of Capstone or this game, I'm starting to get really tired of *Home Alone* and Macaulay Culkin. Everywhere I look, there's his terminally cute little face and everywhere I shop, there are racks of *Home Alone* videotapes. Let's give it a rest for a while, Okay?

As a computer game, *Home Alone* is a natural and this version takes the correct, if obvious, approach. It's divided into two



Digitized movie images combined with sharp artwork in Capstone's version of *Home Alone*.

phases: first, you run around collecting objects and placing them as traps in various parts of the house; second, the burglars enter and you must avoid them while leading them into the traps. The graphics are better than average, crisp and with enough detail to give the game atmosphere. There are also digitized images from the movie here and there.

With the exception of some required keyboard work, the play is fairly easy, which makes the game ideal for kids and that's definitely the target audience for *Home Alone*. Control can be either all keyboard or a combination of keyboard and joystick. I think it's a little too complicated for small children, though older kids won't have any problem. Like most games derived from movies, *Home Alone* doesn't have much depth and adults will probably tire of it quickly. Kids, on the other hand, will have a great time with it.

I want to give Capstone a little praise here. In the past, I've railed at them for their low production values and sometimes sloppy programming, but *Home Alone* is a major improvement in overall quality. I'm glad to see it and I think we can expect even better from them in the future.

CHIP'S CHALLENGE



Epyx

PO Box 8020

Redwood City, CA 94063

415-468-3200

Yes, you read the publisher's name right, it really is Epyx. This is the first Amiga title we've seen from the company since it collapsed a couple of years ago. Epyx has been slowly making a comeback, starting



Welcome back, Epyx! Their first Amiga release in a couple of years is *Chip's Challenge*.

out with a few cartridge games, a few IBM titles, and now one for Amiga. We're glad to welcome them back after so long an absence.

The long hiatus shows in *Chip's Challenge*. It's a reasonably good game, but it has the look of an older title. It's an arcade puzzle game along the lines of *Boulderdash* and Britannica's superb *Prospector in the Mazes of Xor*. The object of the game is to make your way through a playfield cunningly filled with traps and impediments. Even though they're more than adequate, the graphics could have used considerably more polish and detail. There are 144 levels in all, though I've only gotten through the first ten or so. Figuring out how to get through a level is a matter of trial and error, and the game does give you a code word after every level so you don't have to start at the very beginning each time you play. However, I do think that some of the boards rely a little too much on unnecessary repetitive tasks to make them seem more difficult

than they are. For example, on one screen you have to pick up four differently colored keys, but between each one you have to run over and throw a switch to gain access to the area where the key is. It gets a little tedious.

While *Chip's Challenge* isn't one of the best of the year, it still has plenty of entertainment value. It's addictive enough that I found myself playing it quite a lot longer than I needed for this review. In fact, I believe I'll give it another go right now. Please don't disturb me for a couple of hours, Okay?

VENGEANCE OF EXCALIBUR



Virgin Games

18061 Fitch Avenue

Irvine, CA 92714

714-833-8710

Just when I thought I'd had to save Camelot for the last time, along comes *Vengeance of Excalibur* and I have to do it all over again. If you remember Virgin's *Spirit of Excalibur*, you'll remember its fine interface and lush graphics. This instalment is just as good as the original. It seems that after the death of Morgan le Fay, an even worse creature was unleashed and this Shadowmaster has kidnapped the court enchantress, the Grail, and Excalibur. Your quest to recover them takes you to Spain, where the game is set. Using a scrolling map with overlaid control icons, the play is reasonably fast and all action is accomplished by point-and-click operations. It's a good interface with a short learning curve. If anything, the graphics are even better than in the original. (I'd still like to see more frames in the animations, though.)

Knights of the Round Table take a trip to Spain in Virgin Games' *Vengeance of Excalibur*.



Wandering around Hobbiton in Interplay's interpretation of Tolkien's classic *Lord of the Rings*.



The sound and music are the weakest part of the game, sounding flat and tinny.

What I like most about *Vengeance*, besides the graphics, is the medieval Spanish setting, where quarreling Christian kings are trying to oust the ruling Moors. It adds an exotic element that makes a refreshing difference from the standard Arthurian quest games. *Vengeance of Excalibur* is well worth adding to your graphic adventure game shelf.

LORD OF THE RINGS

Unrated

Interplay

3710 S. Susan
Santa Ana, CA 92704
714-545-9001

In all the years I've been reviewing games, this is the first time I've decided to print a review without a rating. The plain fact is that the *Lord of the Rings* is a personal, subjective thing. I've read the books in excess of thirty times; for a couple of years, they're *all* I read. I taught myself to write elvish and learned the lore of Middle Earth. Because I know the story so well and because it's my all-time favorite work of fiction, I can't come even close to being objective about the game.

There have been several computer-game versions of the trilogy, for the most part poorly done, but this one from Interplay is the best yet. It's an enormous game, taking the story as far as the Mines of Moria. It uses an overhead view, as originated in *Faery Tale Adventure*, and the graphics are quite well done. The introduction to the game is one of the longest, as well as one of the best, I've seen. The artwork is exceptional. The play is handled as in a fantasy

role-playing game, with exploration, encounters, and hit points. That's not the way I would like to have seen it done, but Interplay has done an admirable job in the execution. There are several levels of menus for managing inventories, talking to other characters, and doing battle, all of which are slower to navigate than I would like. (For that matter I think the whole game should be speeded up.) My only serious complaints are that combat should have been more automated and you're only allowed two saved game positions. Usually in FRPGs, there are far too many encounters and far too much combat, but this game keeps it toned down to a more reasonable level. (I'd still like to see hit points outlawed altogether.)

If you're a Tolkien fan, you'll have to buy this game just to see how it's done. If you've never read *Lord of the Rings*, Interplay's game will serve as an introduction, but I'd recommend reading the books, too. For me, I'd rather read the books and let



Tolkien's words fill my head with images, but not everyone feels that way; just this once, I'm going to cop out and tell you to judge for yourself.

DARKMAN

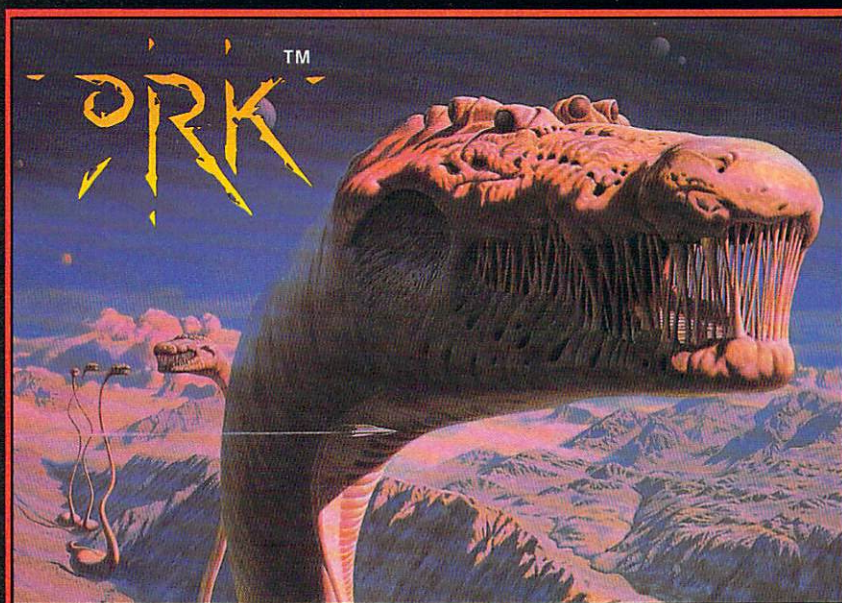


Ocean/EA

1450 Fashion Island Blvd.
San Mateo, CA 94404
415-571-7171

If it were up to me, I would change the title to *Drekman*. Basing a game on a hit movie is one thing, basing one on a flop implies considerable lack of sense. I don't mind admitting I didn't see the movie; the trailers and the reviews were enough to put me off it. The game probably follows the movie and there were references to characters I knew nothing about, but it's a bad enough game that I don't much care. I was immediately disgusted with it in the first section. You're supposed to take snapshots of the villain as he races across a screenful of windows. The problem is that the joystick response is too slow to give you even a faint hope of success. After that, you move into a standard sidescrolling street-scene where you have to fight through endless attackers. I couldn't stand any more after that. Change the name, slightly modify the graphics, and you have *Robocop 2* or *The Untouchables* or *Predator* or any of a dozen other movie adaptations distinguished only by their lack of originality and high body counts. Give *Darkman* the deep six.

The graphics aren't bad, but *Darkman* isn't something I'd care to play again.



ORK

Beamed down to the planet Ixion from the Legion Ship, Ciskei, aspiring Captain Ku-Kabul has to face the dangers and tests specifically placed on this planet in order to prove himself worthy of Leadership. Failing any of the tests will end his career as a Legion-Command Officer... permanently!

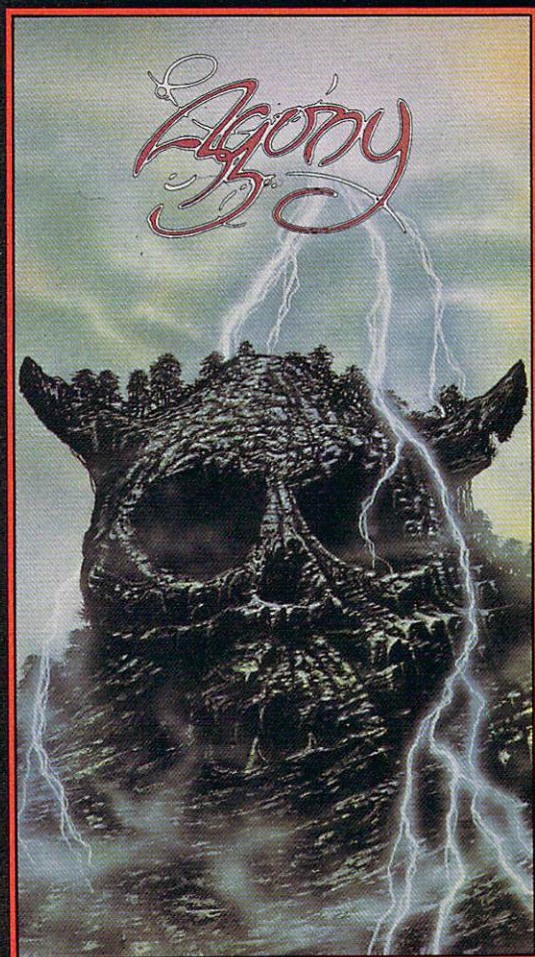
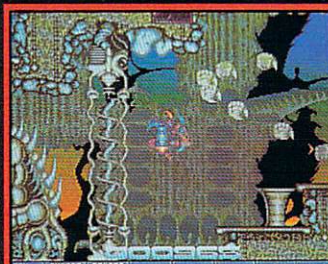
To give him a fighting chance, Ku-Kabul is fitted with twin laser cannons and refuelable jet boosters.

Using brains and brawn he must find, collect and use objects to solve the many perplexing puzzles and defeat the hordes of mighty enemies that infest this deadly arena.

3-layer parallax scrolling, arcade-speed action and powerful FX combine with total-gameplay addiction to bring you the experience that is Ork!

Are you Ork enough?

Screen Shots from the Amiga version.



AGONY

Pit your magical powers against an equal but opposite mystical force. Use your sorcery and fighting skills to battle through six graphically — excellent levels, each infested with hordes of beautifully-animated conjured-up creatures.

Pick up potions and spells to help your valiant struggle to find the secret of Cosmic Strength.

Experience four layers of incredibly-smooth parallax scrolling, animated backdrops, a massive play area, hundreds of on-screen colours, unbelievable gameplay and an exorbitant sound track all expertly mixed together and skilfully cast to bring you a spellbinding brew of computer gaming action.

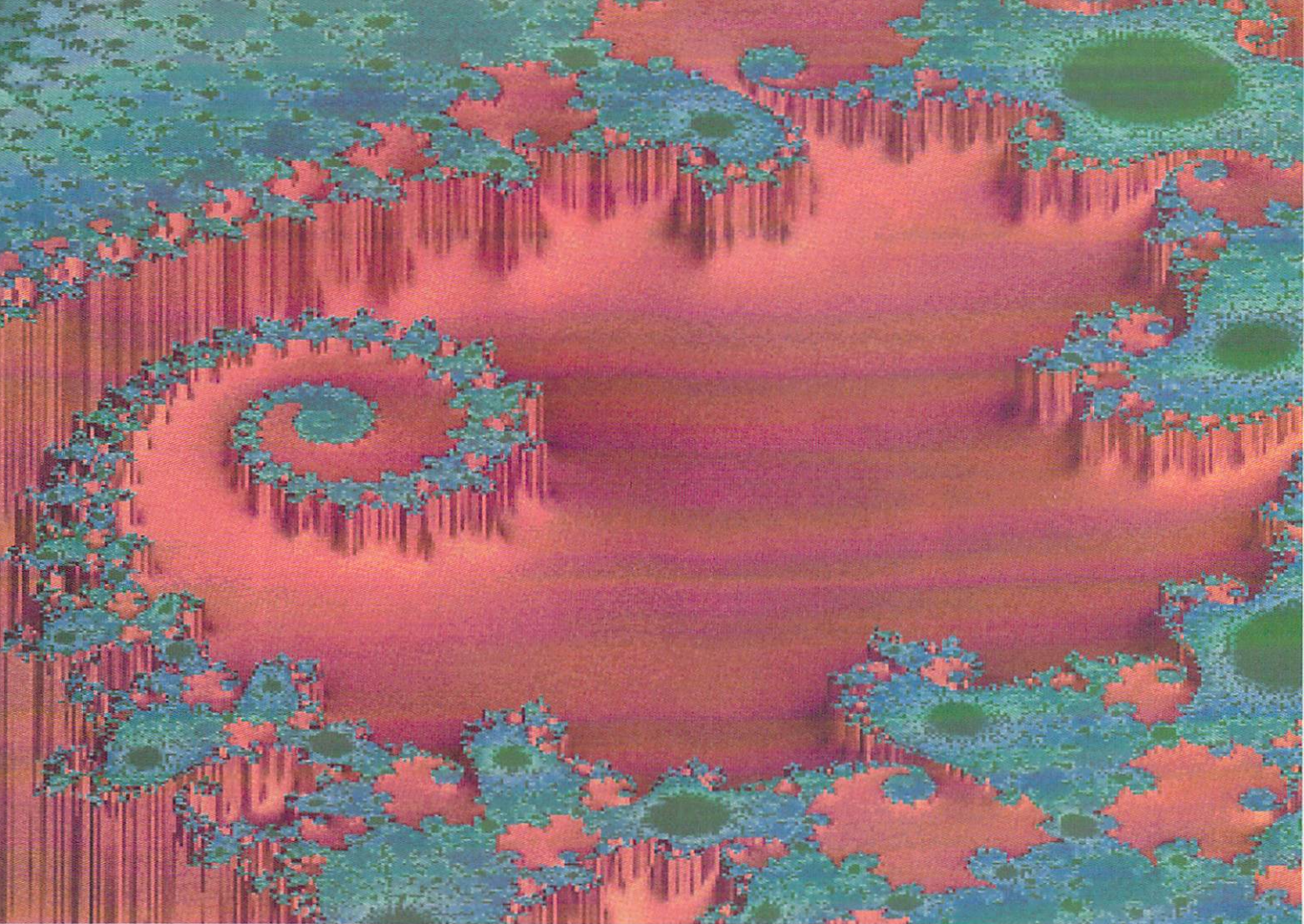
Experience Agony with no pain!

Screen Shots from the Amiga version.



PSYGNOSIS

29 Saint Mary's Court,
Brookline, MA 02146
Telephone: (617) 731-3553
Fax: (617) 731-8379



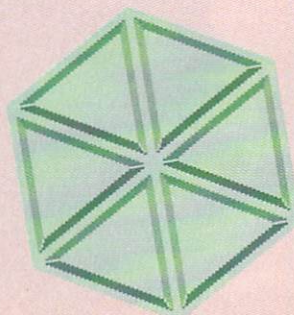
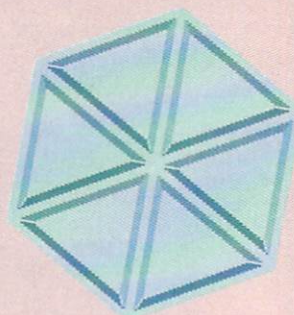
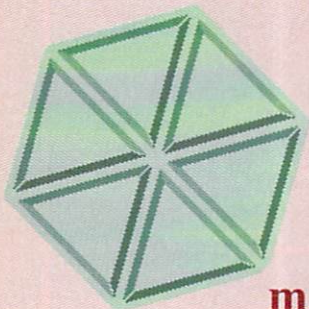
Art created with Seven Seas' *MathVision*

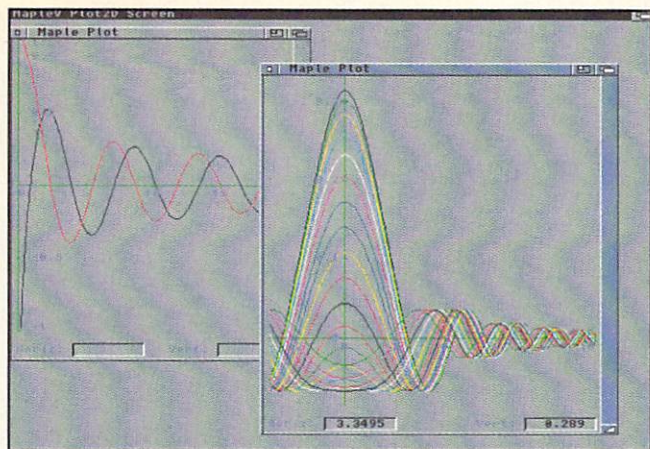
Serious Science Software

by Mark R. Brown

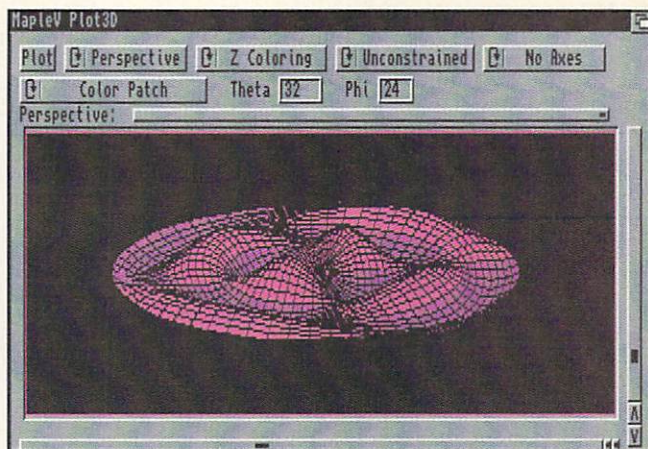
The Amiga is a marvelous machine.
Everyone knows it's the best personal
computer ever built for playing
videogames.

But the very capabilities that
make it an unmatched game
machine - impressive speed, brilliant
color, and stereo sound - also make it a
serious scientific workhorse.





Maple V's 2D screen with two plot windows.



A Maple V 3D plot screen with Intuition 2.04 gadgets.



Scientists *do* use Amigas; they're being used for serious scientific research at hundreds of private research labs, government agencies, and universities. True, scientists generally opt for the higher-end Amiga models, with multi-megabytes of RAM, lots of hard drive space, and the fastest possible processors and co-processors. They've even been known to hook their Amigas up to mainframe computers. But that is true of *any* computer platform a scientist chooses. Just as most people think you can never be too thin or too rich, scientists believe that you can never have too much computing power.

Science and math applications are notoriously cpu-intensive. Some scientific problems can only be run on supercooled Crays. Storm cloud simulation is a good example - there are just too many data points changing too rapidly to make this type of simulation a good candidate for running on a personal computer. But the sad truth is that most scientists don't have continual access to a Cray, or even an IBM mainframe. And even if they do, the competition for runtime on such machines is fierce. Fortunately, there are still many problems that can best be handled by a PC, and the Amiga is as capable as any. On a price/performance basis, it's the best deal going.

Of course, the limiting factor is software. Many scientific applications are so specialized that the software must be written specifically for the problem. Access to a good FORTRAN or C compiler is then the major concern. Fortunately, the Amiga is well-equipped with a plethora of programming languages, both commercial and PD, and a great many support libraries are available to help handle the crunching and display of data. Scientists who want to develop their own applications software do not find themselves hampered in the Amiga environment.

But for those who are seeking 'off the shelf' solutions, there are a few serious scientific and

mathematical software packages available for the Amiga. Unfortunately, there are not as many as there are for PC clones or the Macintosh, but some very powerful programs are available for the Amiga platform.

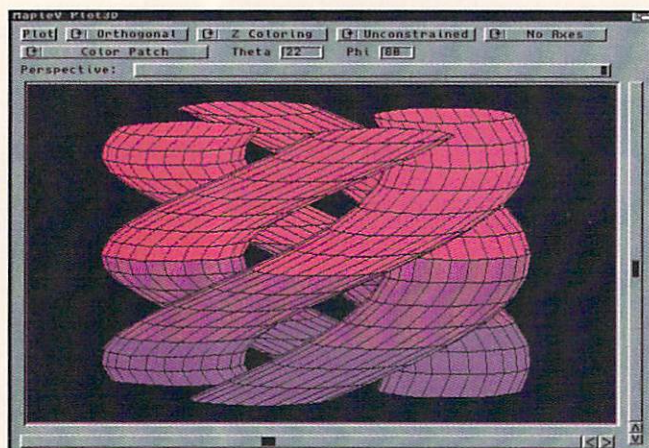
Maple V

At the very top of the list of serious Amiga software is *Maple V*. This mathematics package is one of the most highly-rated math programs available for any computer. There are versions for Unix, XWindows, NeXT, Macintosh, IBM/PC, H-P, Sun, VAX, IBM mainframes, and even Cray! PC magazine reviews have called it superior in many ways to *Mathematica* and *Macsyma*. And the latest incarnation, version five, is available on the Amiga. Best of all, the price of the Amiga version is the lowest of any *Maple* now available: \$450.

Maple V is the first software package we've seen that absolutely requires AmigaDOS v2.04. In fact, it won't even run with some of the earlier release versions of 2.0 for the A3000. But installing 2.04 is a small price to pay for the power of this program. (Besides, you were just about to upgrade anyway, weren't you?) It also requires a minimum of eight megs of hard drive space and two megs of RAM, though I'd recommend more. Some 3D plots I tried were too complex even for our five-megabyte A3000 test machine. Obviously, an '020 or even '030 with a math coprocessor is also highly recommended.

Maple V incorporates over 2000 (!) mathemati-

Maple V is the first software package we've seen that absolutely requires AmigaDOS v2.04. In fact, it won't even run with some of the earlier release versions of 2.0 for the A3000.



A Maple V Plot3D rendering of four similar functions.

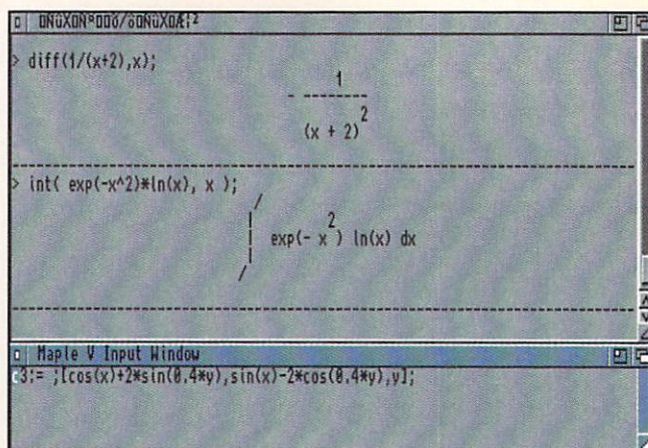
cal functions, with the ability to define even more. Its Pascal-like programming language lets you solve truly complex problems. (The package even includes a Maple language syntax checker called Mint.) For creating more complex and specialized applications, *Maple V* can even generate FORTRAN or C code. Just how powerful is *Maple V*? Let's just put it this way: If you can conceive of a mathematical problem, the odds are very, very good that *Maple V* can handle it. With over 2000 built-in functions, we can't possibly list them, but I've tried everything from '2+2' to calculus and couldn't make it choke.

The program can send output to the text output screen, to a window on the 2D plot screen, or to a 3D plot screen. The 2D screen creates a separate scalable window for each function or set of functions plotted. Each 3D screen plots just one function or set of functions at a time. The 3D screens have some excellent DOS 2.0

gadgets for controlling various parameters, including viewing angle and perspective. I wish the rest of the program had a similar interface. Unfortunately, the default user interface for *Maple V* is little better than a standard CLI window. You type in commands line-by-line, with the ability to recall previous lines and edit mistakes. You can also cut and paste from the help or output windows, which is handy for entering examples. But this implementation of *Maple V* lacks the much more exciting wordprocessor-like editing window of the Mac version.

The folks at Waterloo Maple

Software tell us there's a lot of work in developing such an interface, but they plan on porting it to the NeXT and Windows. If they get a good



The Maple V main screen, with input and output windows.

response from people buying this version of *Maple* for the Amiga, they'll consider upgrading its user interface, too.

Maple V can also be invoked in a manner that uses the CLI that calls it as the user interface. So you can run it from the AmigaDOS Shell and get Shell-like command editing. Or you can call it from *ConMan* or *WShell* or any other AmigaDOS CLI analogue and get the editing functions of that environment. *Maple V* also has an ARexx interface, and you can launch the program as an ARexx-only application that sits in the background waiting for ARexx commands. This feature screams out for someone to write an ARexx interface that makes the creation and editing of formulas and programs easy. A good ARexx-based control panel implemented in *Hyperbook* or *CanDo*, with hooks linking a good text editor to *Maple V*, would make this program accessible to the masses.

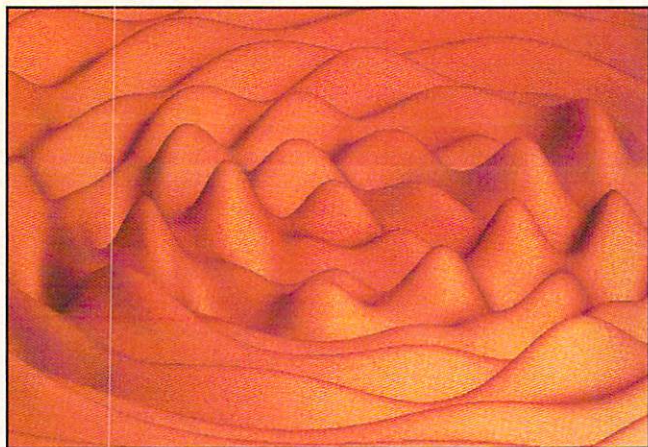
Output can also be had in the form of IFF graphics, a text file, PostScript, and formats acceptable to a selection of graphics terminals. The most useful for serious work is L^AT_EX format, which is compatible with Radical Eye Software's implementation of the T_EX typesetting language for the Amiga. This format lets serious users of *Maple V* produce typeset documents with mathematical formulas and calculations ready for publication. *Maple V* and *AmigaTEX* are without question the most valuable and essential combination of Amiga software a scientific professional could own. [*AmigaTEX* is available from Radical Eye Software, PO Box 2081, Stanford CA 94309.]

In short, *Maple V* is a very important product for the Amiga, and a very capable tool for the science, math, or engineering professional.

Colorful Visions

There is other math software for the Amiga, of course. We've told you many times about

Maple V
 ★★★★★+
 \$450.00
Waterloo Maple Software
 160 Columbia Street West
 Waterloo, ON
 Canada N2L 3L3
 519-747-2373



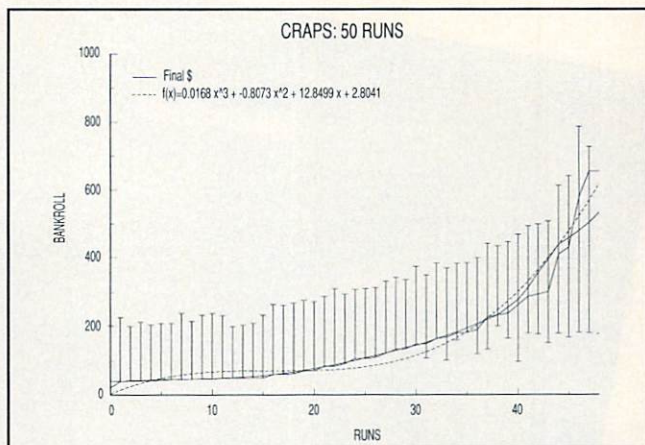
MathVision plots a 3D trig function.

MathVision (formerly *Doug's Math Aquarium*) from Seven Seas Software. This mathematical and graphical wonder is an exploratorium of wondrous mathematical curves and spaces. Its input screen allows you to create an almost unlimited array of mathematical formulas, which you can then plot in color in a multitude of ways. The results are so wonderful that it's almost not like math at all, but like some weird, advanced, extraterrestrial form of string art.

But *MathVision* is also a serious mathematical tool. It can be used to explore the Mandelbrot and Julia sets, fractals, chaos, and other topics on the cutting edge of mathematical research. It can also be used to plot useful scientific and engineering functions, deriving visual maps that make those functions more 'real.' The title graphic of this article was created using *MathVision* and sophisticated formulas for the generation of 3D shaded Julia set images. The sample on this page shows a simpler but still impressive plot of three-dimensional trigonometric curves. Besides being a useful graphic tool and fun Amiga toy, *MathVision* is a must-have for serious scientific and mathematical researchers.

It's a Plot!

One of the favorite pastimes of the scientist is generating and plotting data. The data generation we'll leave up to the experimenter; but the plotting we can hand over to *MultiPlot*. This Shareware (\$20) data plotting program is a very capable research tool. Developed for use in the Immunology Laboratory at Massachusetts General Hospital, *MultiPlot* can plot multiple sets of data in a variety of ways, producing IFF graphs on the Amiga screen, creating various CAD program formats, generating Postscript or EPS files, or making HPGL plotter files. The program even comes with a PLT: device driver that turns a preferences printer into a respectable plotter.



Encapsulated Postscript output from *MultiPlot*.

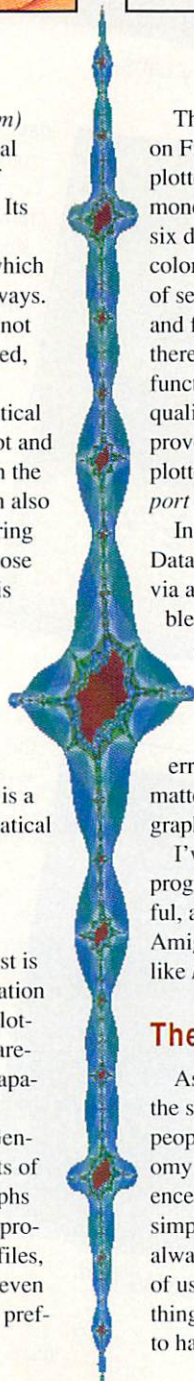
The latest version is *MultiPlot XLNe*, available on Fish #572. Any number of data sets may be plotted on a common X-Y axis, though for monochrome output *MultiPlot* has available only six different point and line representations. (For color use, each of these can be represented in one of several colors.) Two types of data smoothing and four kinds of curve fitting are supported, and there are a variety of WYSIWYG screen-editing functions as well. The plots are of professional quality, as the EPS example printed here should prove. (For the story of this graph, and the data plotted on it, see this issue's *info technical support* section.)

Input is via a simple columnar ASCII text file. Data is directed into the proper input positions via a configurable input filter. *MultiPlot* is capable of handling X and Y data with high and low error values, but needs only a Y value to create a valid graph. Once a graph has been produced, it is possible to sort by X values. Graphs can include error bars, and can be formatted as scatter graphs, bar graphs, or line graphs.

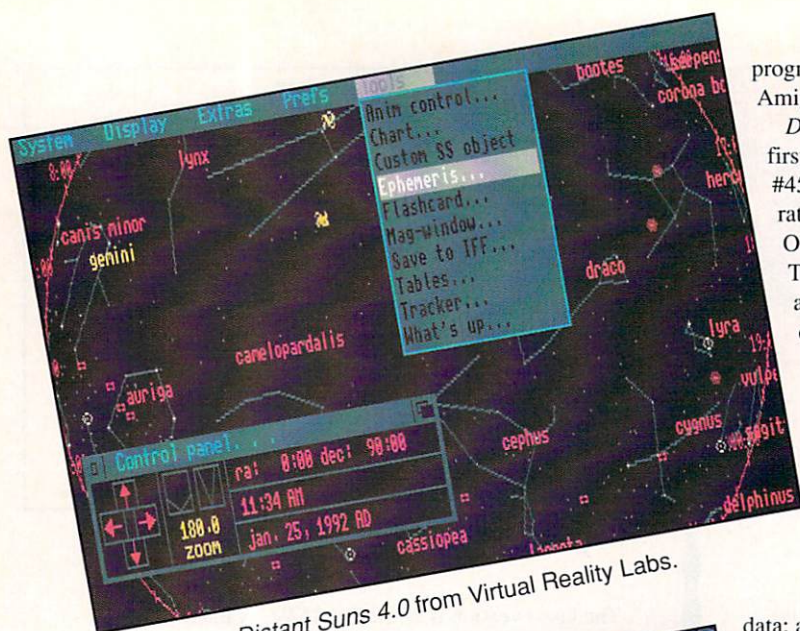
I've fully enjoyed using this program. It's intuitive, powerful, and impressive. The Amiga needs more programs like *MultiPlot*.

The Sky's the Limit

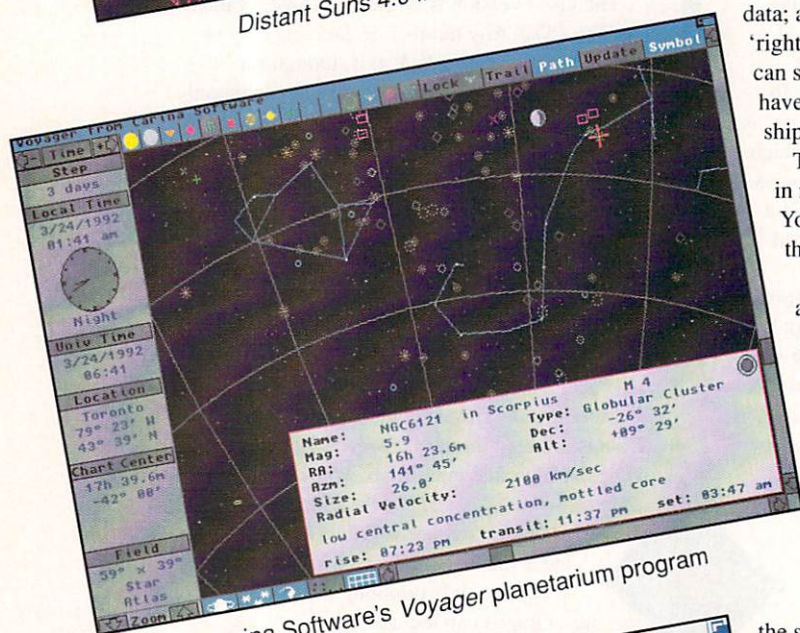
Astronomy is the oldest of the sciences. As a hobby, more people are involved in astronomy than in all the other sciences combined. Perhaps it's simply because the sky is always there overhead for all of us to see. Maybe it's something deeper. In any event, we are lucky enough to have two excellent commercial planetarium



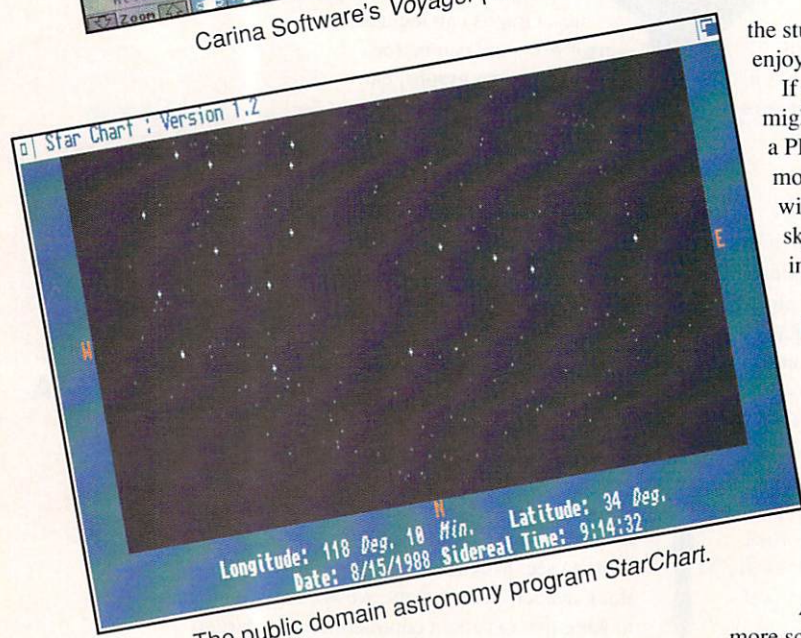
MathVision
 ★★★★★
 \$197.00
 Seven Seas
 Software
 35 Cape George
 Wye,
 Port Townsend, WA
 98368
 206-385-1956



Distant Suns 4.0 from Virtual Reality Labs.



Carina Software's Voyager planetarium program



The public domain astronomy program StarChart.

programs available for the Amiga.

Distant Suns v4.0 was the first of these. [See review in .info #45. \$99.95 from Virtual Reality Laboratories, 2341 Ganador Ct., San Luis Obispo CA 93401, 805-545-8515.]

This excellent program lets you view an image of the night sky from any spot on earth (or even from vantage points elsewhere in space) at just about any time in history. You can pick the magnitude of stars you want visible, add in nebulae and galaxies if you want, and even expand the view to include a huge catalog of stellar objects with optional data disks. Clicking on an object brings up a data window filled with information. Clicking another button can bring up a digitized IFF picture.

One menu selection brings up ephemeris data; another tells you what's happening in the sky 'right now,' including the phase of the moon. You can set the whole sky in motion at any speed, or have it sit stock still while you examine stellar relationships in detail.

The planets aren't forgotten, either. You can set them in motion, watching them move across the heavens. You can see where they were last week or where they'll be a hundred years from tonight. It's wonderful.

Most of the same things are true of the newest astronomy program for the Amiga, *Voyager*. [See preview, .info #46. \$124.95 from Carina Software, 820 Williams St., San Leandro CA 94577, 510-352-7332.] As a port from the Mac, this program has a decidedly different 'look and feel' than *Distant Suns*, though it functions similarly. It does have some nice touches of its own, like the world globe used to input viewpoint latitude and longitude.

Both programs have available a selection of additional data and graphics disks. Either makes the study of astronomy much more interesting and enjoyable.

If you're operating with a limited budget, you might want to check out *StarChart* [Fish #159], a PD planetarium program with a somewhat more limited view of the universe. Still, this program will show you hundreds of stellar objects in the night sky for any time or location, and will bring up an information window for any object selected.

Miscellaneous Software

There are dozens and dozens of interesting mathematical, scientific, and engineering related Amiga PD and Shareware software titles. Though listing them all would take an inordinate amount of space, we've picked out a few to share with you. Most of the best can be found on the 580+ Fish Disks.

Besides those listed here, you'll want to use the *Aquarium* Fish Disk database [Fish #559] to find more science and math applications. The 'Calculation' and

'Simulation' index buttons will bring up quite a few interesting goodies.

Amiga Spectrogram v6.3 [Fish #543] computes a frequency spectrum analysis of any IFF 8-bit audio sample, and produces a color display representing frequency versus time; when used on a sample of a human voice, this produces a 'voiceprint.' The picture shown here is an analysis of Madonna delivering an outrageous line on 'Saturday Nite Live.'

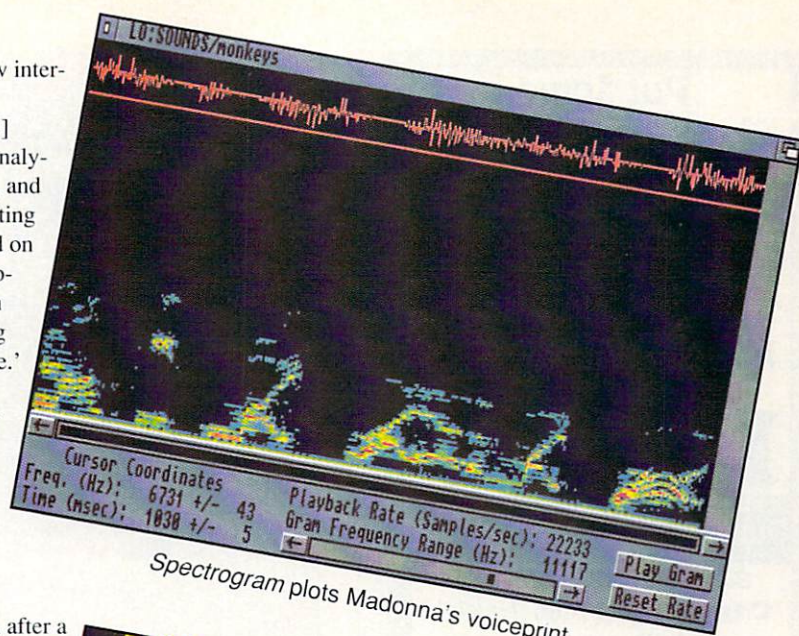
If you've ever wondered what four-dimensional objects might look like to our pitiful three-dimensional eyes, check out *Tesseract* and *4D Navigator* [Fish #541, not shown]. These programs allow you to rotate the 4D analogues of a cube, an octahedron, a tetrahedron, and a sphere in all four dimensions. These programs are veritable reality-benders, but the scary thing is, after a few minutes of intense concentration you actually start to get a 'feel' for the fourth dimension!

If you've delved very far into the field of computer science, you've probably run into the concept of a 'Turing Machine.' First proposed by computer pioneer Alan Turing, the Turing Machine is a simple hypothetical computer that runs a program composed of a long paper strip of 0's and 1's. The TM can read a single bit at a time, move forward or backward, write a 0 or 1 to the strip, and change the state of its internal registers. That's it. But Turing assured that such a simple machine could emulate *any* more complex computer - provided that time was not important. This principle has since been extended to two dimensions, with four directions of movement and four pixel colors on the program field instead of just two binary 'bits.' As the two-dimensional Turing Machine traverses its colorful plane, it changes the colors of the bits it travels over, creating interesting patterns that range from wild, abstract flows to rigid, ordered patterns. *TurMite* [Fish #249] is one of my favorite Amiga PD programs because it's so fast and colorful and fun to watch. It will let you generate random 2D Turing Machine programs, or you can write them yourself. It's much more fascinating to watch in real-time than it is on the printed page.

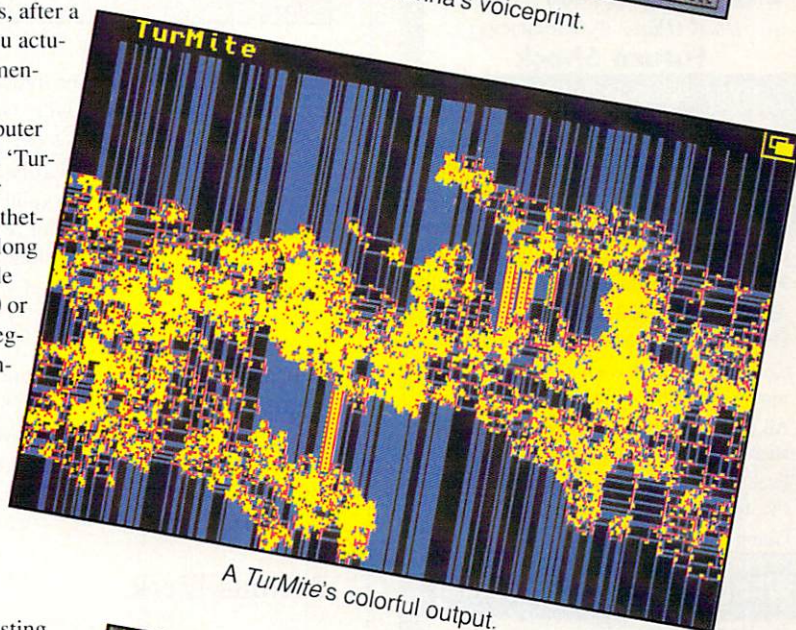
Elements [Fish #384] is a marvelous interactive periodic table of the elements. Clicking on an element in the table brings up a window full of information about it; shift-clicking on two elements displays data on how they react together.

We mentioned *Chemesthetics* [Fish #574] a few issues back. It creates illustrations of molecules based on the Calotte model. As the docs for it say, 'even dangerous molecules like dioxine look quite nice.' It can save its creations as IFF files, and includes many sample data files.

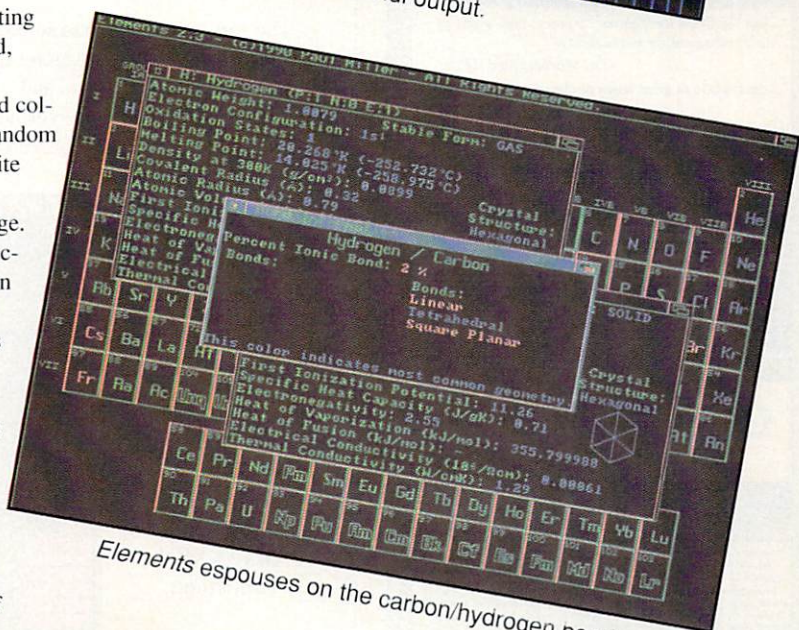
Gravity-Well [Fish #250] simulates the motion of



Spectrogram plots Madonna's voiceprint.



A TurMite's colorful output.



Elements espouses on the carbon/hydrogen bond.

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What the Critics are Saying

- "...just the ticket for Toaster 2.0 users...I can attest to their craftsmanship and usability."
- Dr. Mortier, Avid 1/92
- "...the fonts look great when rendered."
- Mr. Dubreman, Avid 1/92
- "These fonts are the best objects we have seen, honest. If you need this kind of product you need Broadcast Fonts 3D....Buy them today..."
- Imagine Gazette 9/91

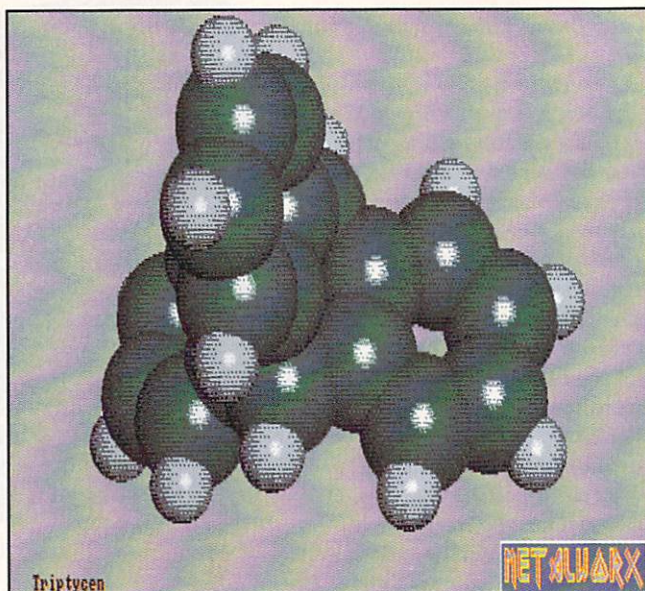
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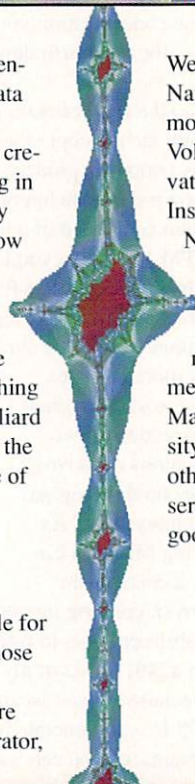
Chemesthetics
draws a
Triptycane
molecule.

astronomical objects in three dimensions. The program comes with data for the solar system and the local group of stars, and you can easily create your own object data by typing in numbers in the data window, or by using the mouse. The multi-window interface is really well done and is easy to use. My fascination with this program arose from making subtle changes in the state of the solar system and then watching the inner planets fly away like billiard balls. It's astounding to think that the universe is in such a delicate state of equilibrium.

Serious Work

The Amiga is more than suitable for serious scientific work. Among those who know so are scientists and researchers at Lawrence Livermore Labs, the Stanford Linear Accelerator,

Westinghouse Corporation, Sandia National Labs, the USGS volcano monitoring station at Hawaii National Volcano Park, Mount Palomar Observatory, the UCLA Brain Research Institute, Deep Ocean Technologies, NASA's Jet Propulsion Laboratory, the University of North Dakota's Center for Aerospace Studies, the Cal State Mechanical Engineering Department, MIT's Department of Materials Science, and the Math Department at the State University of New York at Albany, among others. If you're using the Amiga for serious scientific research, you're in good company.



Terminus



Mercury flies
from the solar
system in a
Gravity Well
simulation.

FractalPro 5.0

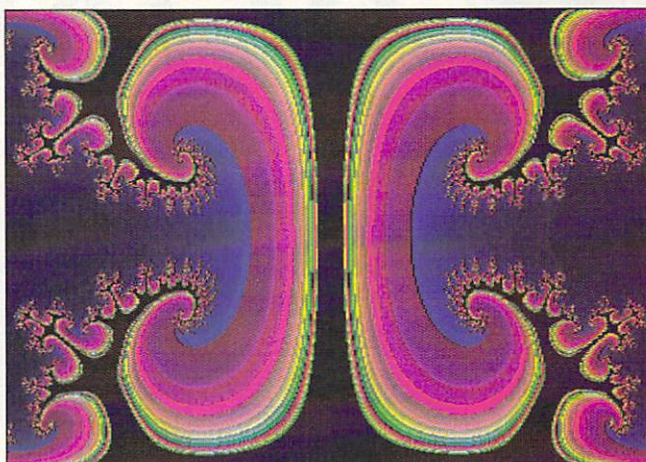
by Tom Malcom

FractalPro is about beauty. Without question, it produces some of the most breathtaking images ever seen on any computer screen. I'm a longtime fan of *FractalPro*; it is the first fractal explorer that let me step up from 32-color lo-res screens to 256-color HAM. Now *FractalPro 5.0* goes even further, adding 24-bit support. You won't believe what your eyes are seeing! The graphics printed on this page are nothing compared to seeing them on-screen painted with light.

FractalPro 5.0 improves considerably on previous versions, but the improvements come at a cost: it only works on an Amiga with either a math coprocessor or with a 68040. The enormous number of calculations required to generate even a lo-res screen make the process a very slow one. You'll also need a large hard drive if you plan to do any animations, which you certainly will. *FractalPro* has built-in animation support, controlled from a menu. Combined with the internal 24-bit graphics, you can make video fractal movies better than any you've seen before. There are menu options for panning and zooming, making motion control a simple matter.

Old Flaws & New Stuff

Unfortunately, 5.0's interface retains the clunkiness of the earlier versions. The two things I dislike most about it are zooming and the fact that it doesn't automatically jump from the control screen to the display screen. Zooming uses a standard Amiga window and is limited to 1X, 2X, 4X, 8X, and 16X magnification. The width of the



Wolf Mandelbrot,
rendered
at a count of
2048.

border on the zoom window makes it extremely difficult to position it accurately. I'm hereby putting MegageM on notice that I want a draggable, scalable zoom box in the next version.

There are a couple of new types of fractals in the 5.0 version, bringing the total to eight: there are the standard Mandelbrot and Julia sets, and then both Mandelbrot and companion Julia versions of Cube (Z^3+Z & Z^3+C), Sine ($\sin Z+Z$ & $\sin Z+C$), and Wolf ($\text{Wolf}Z+Z$ & $\text{Wolf}Z+C$). The Wolf Mandelbrot is my new favorite and I'll be spending months rendering screens with it.

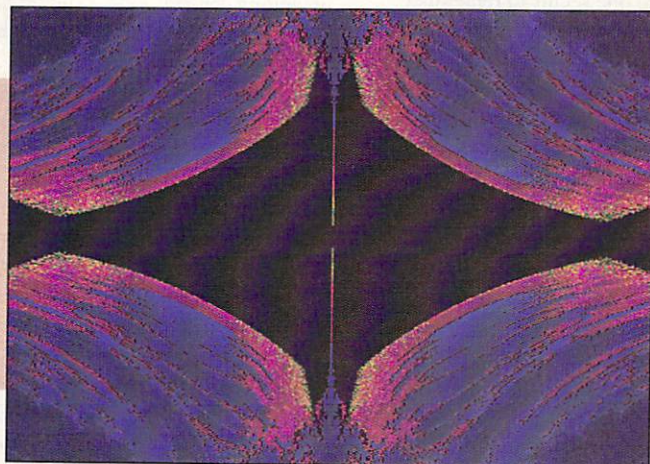
VistaPro and ScapeMaker

One of the things I like most about *FractalPro* is its increasing integration with another of my favorite Amiga titles, *VistaPro*. *FractalPro 5.0* can automatically

save data in *VistaPro* format for later rendering into a landscape. MegageM also has a new version of *ScapeMaker*, numbered 2.0. What *ScapeMaker* does is let you take virtually any IFF file and translate it into DEM data, with elevations based on the IFF's colors. The most interesting new feature in *ScapeMaker 2.0* is the ability to perform a true double exposure, which allows you to load in two landscape files and add them together. Talk about some strange and wonderful possibilities! ARexx support has also been added and there's a convenient feature to measure the height of any given point in the image.

MegageM's fractal software has come a long way in the last couple of years. If you've exhausted all the PD fractal explorers and are ready to move on to something better, *FractalPro 5.0* and *ScapeMaker 2.0* are the ones to move to. You'll be seeing things even the wildest imagination could never dream of.

Sine Mandelbrot,
based on the
formula
 $\sin Z+Z$.



FRACTALPRO 5.0

\$149.95



SCAPEMAKER 2.0

\$39.95



MegageM

1903 Adria

Santa Maria, CA 93454

805-349-1104

ProVisions

ProVisions Contents

- **Audio 42** Bob examines 2 expansion kits for B&P Pro.
- **Video 44** OJ plugs in the Video Blender.
- ▲ **Graphics . . . 46** Brad works with Pixel 3D v2.0.
- ◆ **MultiMedia . 48** Harv improvises music with CDTV.

AUDIO

by Bob Lindstrom

Obsolete? Our product? Oh no, never! We've designed our product to grow with you, to become more sophisticated as you become more sophisticated, to evolve with new power and new features as the hardware becomes more powerful."

Sing along, everybody:

"Our product is truly an investment in the future."

Right.

If you've been using computers for the past 20 minutes or more, you've probably heard dozens of variations on those themes. Trouble is, after all the promises have been sung, no one seems to remember the original tune at delivery time. Almost every MIDI veteran's software (and hardware) collection has Version 1.0 of products that were going to be the greatest musical breakthrough of all time... as soon as Version 2.0 came out.

More Musical Plumbing

Two outstanding exceptions to this aspect of life in the computing lane are *Bars & Pipes* and *Bars & Pipes Professional*, both from Blue Ribbon Soundworks. These object-oriented MIDI

sequencers have been highly touted for their ability to incorporate an unending series of new features as add-on

tools. Fortunately for Amiga MIDI users, Blue Ribbon has backed up its promises by releasing no less than four full floppy disks of add-on tools and accessories for *B&P* (not to mention the extra sound sample and MIDI music file disks also sold by the company).

The two latest add-on disks for *B&P* are *The Creativity Kit*, an ingenious collection of algorithmic editors and other compositional aids, and *The Pro Studio Kit*, a more utilitarian selection of tools for fixing and fine-tuning MIDI data.

Creativity Kit

Of the two disks, *The Creativity Kit* is the more fun, including several "Gee, I should have thought of that" gadgets to make composing a more entertaining and interactive experience.

For example: crank out an eight- or sixteen-bar rhythm track. It may be way cool on its own, but by the time you've looped it a few hundred times you're ready for a Rhythm Ace scholarship with the local Elks Club band.

Before you have to start wearing matching white belts and shoes every Friday night, drop the Random Notes tool into your *B&P Pro* pipeline. (This tool, like several others on the disk, requires the *Pro* version of *B&P* to operate.) On-screen sliders allow you to set density, rate, note selection, feel, and several other parameters that control the random addition of notes to your track. With some deft tweaking, you'll have Random Notes dropping nifty little off-beat accents and unexpected variety into

The Creativity Kit

★★★★★

\$59.95

The Pro Studio Kit

★★★★★

\$59.95

your repeating rhythms. Some will be hot, some will be the heavens. But you can edit out the stinkers later. In the meantime, you've created a non-repeating rhythm pattern with a minimum of sweat.

The Creativity Kit includes nearly twenty add-on tools. All of these goodies are useful, but my favorites are:

Arpeggiator: Arpeggio generators that create one-, two-, or three-octave arpeggios based on keyboard-held notes. The patterns can be adjusted to go up, down, randomly, or back and forth across the pitches. This is a neat way to automatically beef up your textures or to churn out New Age gibberish ad nauseum.

Auto Transpose: Allows notes played on one track to influence the pitches in another track. Permits you to transpose existing sequences in real time by just hitting a note on the keyboard. A great aid when trying to find the right key for tone deaf Madonna wanna-bees.

Riff-Chord: Here's the 'weird but cool' award-winner. This tool splits the keyboard. It silently generates chords based on the note you press on the left side, then audibly patches those harmonies into the single pitches you play on the right. A wonderful way to simulate more (and faster) fingers than God gave you.

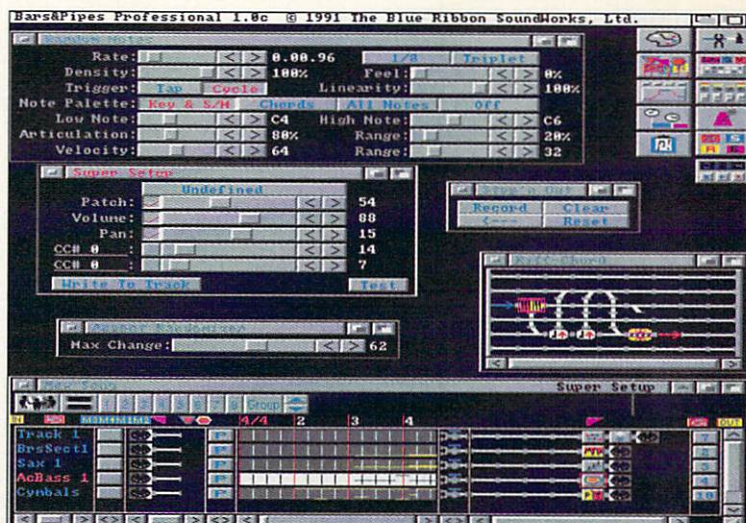
Step'n Out: An intelligent step editor. Play the pitches/chords you want to hear in any rhythm. Then go back and hit a single key to dictate the final rhythm of the passage. Step'n Out pastes the two entries together into a single pitch- and rhythm-perfect passage. If you hate the tedium of step editors but envy their effectiveness, Step'n Out is the answer.

Also in *The Creativity Kit* are an Articulation Randomizer, a Triad Arpeggiator, a Glissando Generator, and more.

Pro Studio Kit

The 15 tools in *The Pro Studio Kit* aren't as clever as the tools in *The Creativity Kit*, and they all require *Bars&Pipes Professional*. Though not as glamorous, these tools are life-savers for MIDI manipulation.

On the editing side, you have an Articulation Modifier that lengthens or shortens note duration; DeFlam and DeGlitch tools remove closely adjacent notes and notes of very short duration to perform 'clinker' surgery; an Event Smoother evens out the response curve on pitch bend and aftertouch data; a Note Converter changes a single note into another throughout a complete track; a Note Filter redirects notes within a range to another



New B&P add-on tools add features and editing capabilities to B&P and B&P Pro.

track; and a Velocity Controller converts control change events into note velocity, which is excellent for shaping phrases in real time.

Other tools for polishing scores include Feels Good, a data shifter and randomizer that alters the 'feel' of percussion tracks by changing time and velocity values. With a basic setup based on the MT-32 percussion keyboard layout, Feels Good will immediately go to work for many Roland users and can be customized for other synths.

Remote Patch identifies parts of the keyboard as program change buttons for on-the-fly patch changes. A related tool, Super Setup, defines an initial setup for a track including patch, volume, pan position, and controller definitions.

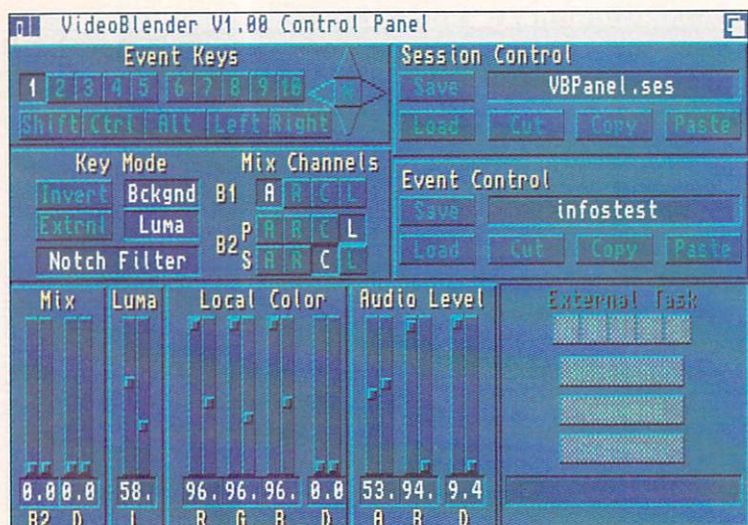
Good Tools

The tools on both these disks feature the button/slider design that makes all B&P tools easy to use. If you've struggled with the quantizing and algorithmic editing in some other sequencers, you'll be ecstatic over the real-time interactivity of these B&P tools.

This is great stuff. The tools available only for use with *Bars & Pipes Professional* stand as a strong argument for purchasing that version instead of the less expensive and less powerful *Bars & Pipes 'classic'*. It's nice to see a company standing behind their product by keeping promises and adding impressive functionality.

It's nice to see a company standing behind their product by keeping promises.

Blue Ribbon SoundWorks
1293 Briardale Lane NE
Atlanta, GA 30306
404-377-1514



The *Video Blender*'s VBPanel master control panel module.

Close on the heels of NewTek's *Video Toaster* comes another video peripheral with the name of a home appliance: the *Video Blender* from Progressive Peripherals and Software. It's not titled in such a manner simply to ride the *Toaster* bandwagon, however. It was named over three years ago when work began on the device, which is designed to 'blend' video much as a standard special effects generator does in the typical studio.

More Than a Genlock

Basically, the *Video Blender* fits into the genlock family of Amiga video devices. The *Blender* offers the usual standard Amiga genlock functions with fading between external video and Amiga imagery, synchronization of the Amiga to external video, and overlay of Amiga signal atop that video. But it has several features that set it apart from most genlocks. Check out this list of capabilities:

- Remote control of all functions via connection to the Amiga's serial port.
- Built-in notch filter.
- Audio mixing of up to four sources.
- Luminance and external keying, which may all be used in combination with the standard 'color zero' keying.
- Mixing of more than one source of video.
- Processing amplifier controls to adjust saturation, brightness, and hue of external video signals.

- A built-in color background generator with software control of hue, luminance, and saturation, capable of producing any color from a palette of 16.7 million.
- Six software programs for controlling the *Blender* and producing wipe transitions between selected video sources.

The *Video Blender* connects to any Amiga's RGB port with a 23-pin cable. Since the *Blender* is a actually a genlock, it cannot operate with another genlock or *Toaster* installed (except as outlined in last month's Video column). It is an unassuming beige box (oh, how I wish someone would outlaw beige paint!) that sits between your monitor and computer. The connections are on the rear of the box, except for the four audio inputs. These are on the front panel, along with the proc amp controls and the audio level knobs. As for the operational controls, well, there aren't any! The *Blender* is exclusively software controlled! If you're used to tweaking and twisting, then go somewhere else. The *Blender*'s commands are sent via the serial port. If you want to control another device serially, you'll need a multi-serial-port card. Fortunately, the *Blender*'s software multitasks nicely, and is capable of running in the background. There are six programs supplied with the *Video Blender* and you'll need at least four of them.

The Software

The *Blender*'s software works well and in some cases is superb. Unfortunately, the programs interrelate in a manner that is somewhat confusing at times. Let's start with VBPanel, the program that allows you to set the controls of the *Blender*. Although the interface has sliders and buttons, you wouldn't use it to perform live effects and switching. You use the interface to set up a key, fade, or mix and then assign it to a function key. Then you can tell the interface to disappear and you can run any other Amiga program to display your images or animations. Pressing the function key will still command the *Blender* to perform the pre-designed effect.

Should you have a sequence or series of events you'd like to line up and execute automatically, then you would use VBPanel to define and assign each event. Several events can be saved together as a session. At this point you move onto the next piece of software, VBPerform. This program is basically VBpanel with no panel. It listens to a script file and performs the commands as told to. This script file comes from yet another piece of software called VideoScriptor. VideoScriptor allows you to create and edit a series of images, animations, commands for *Blender* events or full sessions, as well as handling commands for other programs. It also allows the user to set up special effect wipe transitions between sources. These wipes may be created with yet another program...

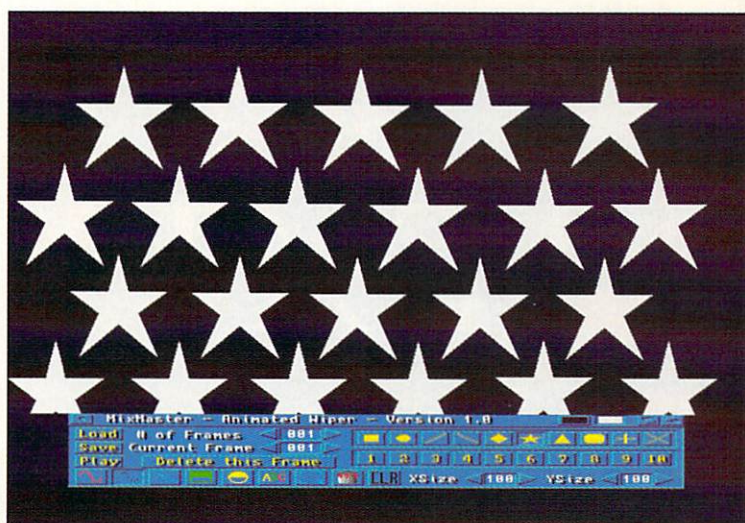
The *Video Blender* fits into the genlock family of Amiga video devices.

but we're getting ahead of ourselves. Scripts written with VideoScripator are used by another program called Slides (which is also used when previewing scripts while using VideoScripator). Starting up the Slides program causes the script file to be read and executed. Slides will load and display the Amiga images and animations as required, for the specified time length or until a specified 'cue,' and will also activate the *Blender* by passing *Blender* commands to the VBPerform program, which needs to be running as well (it can be started by the Slides program, if need be). If all of this sounds a lot of work to basically do the same thing as *ShowMaker*, I'd have to agree. In fact, since *ShowMaker* can command serial port-controlled devices there's no reason why you couldn't do just that. The serial port command protocol for the *Blender* is included in the manual.

The last two pieces of software that are included with the *Blender* are used to create wipes. If you are using two non-Amiga sources of video, then the Amiga can be used to determine which of the two signals should be viewed. The manner in which this is done is by using a black and white pattern. Where the pattern is white, source A is seen, and the black portions become video source B. This is exactly the same approach as many add-on special effect units that you can buy for existing SEGs. If the pattern is changing, then the wipe changes as well. Given the Amiga's ability to make real-time ANIMs, you could produce almost any type of wipe you can imagine. To help you do this, PP&S has given you a program called MixMaster. MixMaster produces custom wipes by animating brushes of your own design, or by using the 'algo-brushes' included with the program. Algo-brushes are defined polygon shapes that can grow or shrink in size without looking increasingly stair-stepped as normal brushes would when magnified. Stars, squares, triangles, and circles are just a few of the ten algo-brushes supplied, and you can design your own too! MixMaster can produce thousands of different wipe patterns. (You can even design a 'falling sheep' wipe!) Should you not want to design a wipe from scratch, you can use the Wiper program, which has numerous pre-programmed wipe patterns. There are 16 different motions that can be reflected on both the Y and X axis, as desired. You can also separate the screen into multiple rows and columns of miniature wipes. The timing is adjustable and the wipes may be saved or played from within the program. It's so intuitive and simple you'll probably never read the instructions on how to use it.

A Few Flaws

Which brings us to the unsavory part. The manual, its tutorials, and instructions are flawed, and will give you a headache until you discover that the manual was written referring to a single program/data disk that ships with the *Blender*. Unfortunately the *Blender* actually ships with



A star wipe in the *Video Blender*'s MixMaster module.

two disks! The install program on the first disk will not install the data on the second disk (there is a data.install program on the second disk, but it isn't mentioned anywhere). There is a 'read.me' file that mentions the second disk, but says nothing about what to do with it. All the tutorials mention the first disk (but never the second), and the second disk is where you'll find the data needed for the tutorials. And some of that data didn't make it to the second disk, so you'll can't finish some tutorials. None of this is damning, but it makes it difficult for the novice user. The VBPanel software looks to the floppy drives for its default files, which is a nuisance if you installed everything on your hard drive.

I haven't mentioned actually mixing video from two external sources. The reason is that few of you will ever use the *Blender* for blending, because the second video source must not only be synchronous (or genlocked) with the first, but must also be an RGB video signal, not composite video! High-end cameras have this capability, but you won't find it on inexpensive or intermediate units. You could take PP&S's suggestion and buy a TBC that has RGB outputs, but these aren't exactly cheap either. Mixing external video sources may not be the foremost use of the *Blender*, but it still boasts its other features. If you can conquer the software and the manual, you'll have some unique functions available to you.

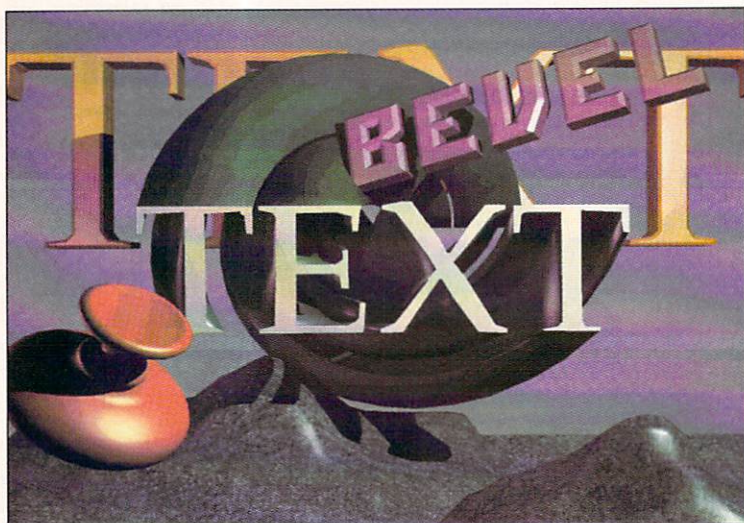


Video Blender
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Several objects created with *Pixel 3D*, including extruded and beveled text, spinning, and 'topographic' effects.



I have noticed something interesting about artists who work with 3D modelling and rendering software: we hate object modelers.

We may hate the one we work with most, or we may not, but we almost always hate everything else.

The way I see it, even good, well-documented software can't make the process of learning to design three dimensional objects easy. For that reason I think we tend to want every tool we use to act like the first set of tools

we really got the hang of, because getting the hang of them was a struggle.

If we can lay our hands on good object conversion software so that we can use the modeler of our choice with the renderer we prefer, it can ease that struggle considerably; when also given specialized 3D modelling tools, we can have features that aren't present in whatever modelling environment we use.

Pixel 3D 2.0 tries to give us those options, and does a good job of it, overall. The program wears at least a couple of hats, and I've enjoyed trying them on. Let's have a look under the brim.



Even good, well-documented software can't make the process of learning to design three dimensional objects easy.



2D to 3D

In many cases it's easier to use paint software to draw a shape than to create the same shape in a 3D modeler. Logos and titles are an example. Outlines for spun or extruded objects are another. The original release of

Pixel 3D did just that (and only that) in a simple, adjustable way. With Version 2.0, those features are retained but many more are added, making the program a versatile addition to anyone's 3D toolbox.

Starting with bitmap conversions, *Pixel 3D* now not only converts 2D shapes to flat 3D shapes with adjustable extrusion, but also can automatically bevel the edges of the shapes, spin them in place or in extrusion, and interpret their color information in several ways.

A converted bitmap may remain flat, with its colors recreated on the flat surfaces. Alternately, different colors in the image can be extruded to different depths; one option allows the colors in an image to be interpreted like a topographical map, with their edges smoothly modelled like the landscape such a map represents (take a look at the simple ground in the illustration). This last is one of the most promising features in the program's bitmap conversions. Using it creatively may make not only relief designs possible, but subtler objects like faces with various expressions.

During a bitmap conversion, several line smoothing strategies can try to remove the typical jagged edges from 2D images. A little trial and error seems involved here, each image being a unique problem. For best results, one should use 2D images in as high a resolution as possible.

Pixel 3D can extrude, bevel edges, and spin the 2D images it imports. The illustration shows a spun object, text with beveled edges, and a text object that was spun and extruded at the same time, all floating above a 'topographical' ground that was generated from a simple image of grey rectangles (when rendered, an image map was applied to this object). Each of these operations is performed when an image is loaded, and if the results aren't satisfactory it's necessary to alter the settings (shown) and reload the image. Fortunately *Pixel 3D* works quite rapidly so this isn't too slow a process.

The Program Display

The created object is shown on *Pixel 3D*'s screen in rendering modes that range from Wireframe to Filled Wireframe to Solid Color. The user can rotate the view around the object using arrow buttons or freehand with the mouse; a bounding box represents the object until the 'Draw' button is selected. The program can draw the object using the same polygon ordering that *Videoscape*, *LightWave*, and *3D Professional* use, which can help the user to locate polygons that need to be flipped or doubled for those programs.

That flipping and doubling can be performed with *Pixel 3D*'s Data Manipulation controls, along with Point Reduction and 'Face Reduction', which are useful when converting objects. Using these controls will change the object, so it's wise to save to disk before experimenting.

All the main controls are well organized and easy to use; the Bitmap Configuration and Data Manipulation panels are a bit more dense, but easy enough after a while.

An ARexx port makes it possible for an external program to take control of *Pixel 3D*, though macros can't be started from within the program itself. It's necessary to do so from the Workbench screen, or for another program to start the ARexx communication. As always, it would be possible to create ARexx macro control screens using *CanDo*, *AmigaVision*, or *Hyperbook*.

Converting Objects

Pixel 3D loads and saves 3D objects in a variety of formats: *LightWave*, *Imagine*, *Videoscape*, *Sculpt*, *Turbo Silver*, and *3D Professional* are all supported, as are saves to AutoCAD's DXF format.

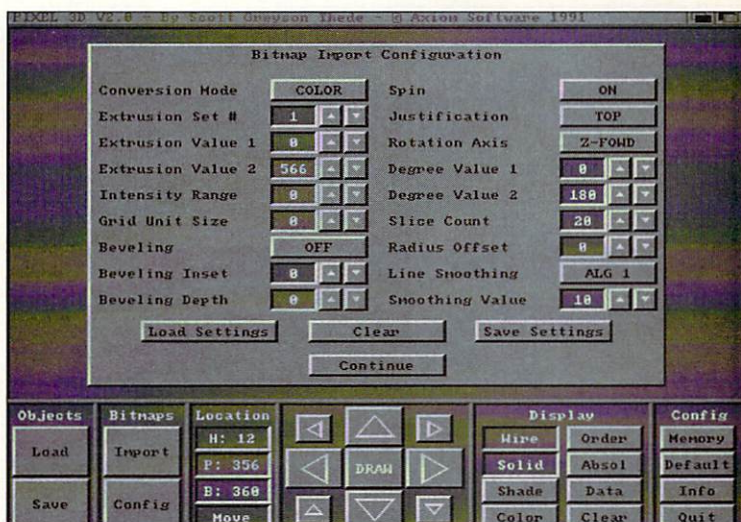
Pair this with *Pixel 3D*'s Data Manipulation functions and the program becomes a valuable tool (remember what I said about everyone's favorite 3D modelers?). Polygons may be doubled for use in *LightWave*, *3D Pro*, or *Videoscape*. When converting to those formats, which use many-sided polygons rather than triangles as raytracers commonly do, triangles can be combined into single faces to reduce their number and memory requirements. When going the other way, many-sided polygons are converted to triangles. In most things concerned with the geometry (or shape) of an object, *Pixel 3D* does an excellent job of making the most efficient version of an object for use in the destination program. Not all these features are automatic, though: you'll need to learn the functions of the Data Manipulation panel to get their full benefit.

Where object converters usually fall short is in surface information, and here *Pixel 3D*, unfortunately, is like the rest. The program does translate an object's color, but fails to translate other surface information like reflectivity, transparency, and other attributes.

In addition *Pixel 3D* doesn't deal with 'Grouped' objects. If one loads a group, all that comes through is the group's parent object.

These aren't crippling problems. It is important, though, to keep them in mind for several reasons. Programs like *LightWave*, which stores surface information separately from object geometry, adapt well: one can edit the surfaces within *LightWave* to restore their lost qualities. In *Imagine*'s case, though, trying to edit the surface information for selected polygons can be tricky. Normally one just groups several independent objects together to avoid this but, as I mentioned, *Pixel 3D* doesn't deal with Grouped objects. For that reason, when going to *Imagine*'s object format it's best to convert complex objects as separate pieces, grouping them together later.

I had one other problem with *Pixel 3D*'s *Imagine* conversions: the axis of the converted object would have a



A view of *Pixel 3D*'s multi-talented Bitmap Configuration controls; here's where we choose what to do to an image on its way to three dimensions.

size of zero in all dimensions. This made it impossible to change the object's size in the Stage Editor. To fix this, I loaded the object into the Detail Editor, resized its *axis* only to a positive value, and saved it out again. This isn't a fatal problem, but it is one that I'd like to see fixed.

In some cases, *Pixel 3D* seemed to create too many edges in *Imagine* objects, which prevented Phong Shading from working. It's possible that more Data Manipulation would have prevented this; as it was, I Merged the offending objects within *Imagine*'s Detail Editor.

Conversions to *LightWave* format seemed less troublesome. Apart from lost surface information, everything worked just fine.

Conclusions


Pixel 3D's unique features for importing bitmaps and finagling with the resulting 3D objects are excellent. The variety of formats it can save makes it a worthwhile program for 3D artists working with almost any other set of tools.

Its abilities in object conversion are not as well implemented, but despite the relatively minor problems I've mentioned, it's better than anything else that's available for the job.



Pixel 3D v2.0
\$129.95
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CD ReMix from Microdeal.

This fascinating title furnishes vivid proof of CDTV's superiority over regular hi-end programmable CD players. *CD ReMix* goes miles beyond the primitive form of programming found in mainstream decks. It is, in fact, an icon-driven CD programming and sequencing 'language.' Put another way, it's an alternate music CD player interface

to the one that comes built into CDTV's ROM chips, but with far more options and power. *CD ReMix* proves there's just no comparison between a programmable CD deck and a real computer with a CD player built in.

The beauty of having a CDTV to create programmed music is that you can do it from across the room on your television screen, instead of having to deal with the banks of tiny, similar-looking buttons that the typical CD player has on its faceplate and remote.

CD ReMix not only lets you sequence CD music in a zillion different ways, but it's also a mini effects and editing studio: you can add some outrageous spoken voice samples, Amiga speech, wacky sound effects, sampled instrument sounds, sampled drums, and fades to music from your own CD collection. Connect the inputs from your tape deck to CDTV's audio outputs and you can use *CD ReMix* to make some wild programs that you can give to friends or play at parties or in your car. This thing literally is a 'D.J. in a (jewel) box.'

CD ReMix has an attractive and relatively easy-to-use

CD ReMix

★★★★

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interface made up of large, clearly labelled 'marble' buttons. The software reacts very quickly to your input (my guess is that it's written in assembly language). For most actions, you just use your controller's directional pad and A/B buttons. When text entry is desired or required, such as if you want to add an Amiga narrator-spoken phrase, *CD ReMix* offers a carousel-style alphabet selection, like the high score screens on which you enter your name in many computer games. So a 'real' keyboard is not required, but text entry is rather tedious.

Once you've created a sequence and want to try it out, *CD ReMix* prompts you to pop out its disc and insert your music CD. Doing this does not cause CDTV to reboot. The *CD ReMix* software, your programmed sequence, and any selected sound samples stay in CDTV's RAM and are then layered on top of or between sections (as short as a fraction of a second), loops (for that M-M-M-Max Headroom effect), and tracks on your music disc, using left, right, or both channels, and at volume levels of your choice.

CD ReMix is crammed with clever sounds to intermix with your music CDs. Choose from a myriad of DJ-style samples, mechanical and natural sounds, animal sounds, voices that shout different phrases, party noises, and more. You can create your own sound samples using an Amiga audio digitizer (not included) and *CD ReMix* will read them in from floppy disks. The dozens of drum samples here are slick, and they run the gamut of just about everything the complete percussionist would want.

The CD holds many pre-built sequences to give you a taste of every sample, effect, and drum on the *CD ReMix* disc. There are even a few (not nearly enough) sequences made to be used with two specific CDs: Madonna's 'Immaculate Collection' and The Eurythmics' 'Greatest Hits' CDs. As a programmed sequence plays, different prompts and effects will appear on screen depending on what you've told *CD ReMix* to do. Drums invoke 'power meters.' Amiga speech talks with a little robotic face. Music segments display a timer. The authors should have included a lot more pre-programmed sequences for popular music discs. Those that are here are really just a teaser.



This time Harv looks at two CDTV titles which give you power over CD audio discs.



As a sound/sample/drum/music sequencer, *CD ReMix* is great fun. It's almost the perfect party toy once you and your guests figure out its interface and programming nuances. Although the program can be made to lock up by inserting the wrong CD at the wrong time, rebooting CDTV will bring up the *CD ReMix* interface in under 15 seconds. After you slave over a sequence for a while, you should save it off to floppy disk, and one disk will hold hundreds of sequences.

This software is definitely geared towards the MTV generation. Aging hippies will like it too. If you've ever wanted to mess around with a DJ's mixing console, this program is for you.

Music Maker

Music Maker takes a very different approach to mixing interaction between CD music discs and your input. Where *CD ReMix* relies totally on its paper manual to guide you through its features and functions, *Music Maker* has no manual at all. Rather, an enthusiastic-sounding male narrator leads you through the program's areas and features, and will demo the software while you watch and listen. Everything on this disc is easy to learn and use.

Music Maker is divided into four main areas. Juke Box offers seventeen 'popular' full length CD-quality tunes, accompanied by individual thematic low-res graphical slideshows (to set a mood, I suppose) that run the gamut of the Easy Listening charts of the past few years, including Lionel Richie, Madonna, Sting, The Beatles, Elton John, and Dire Straights, among others. But these selections are not performed by the original artists who made them famous. Because securing the rights to the original recordings would have been cost-prohibitive, we are instead treated to Muzak-quality instrumental interpretations of 'Yesterday,' 'Into the Groove,' 'Let it Be,' 'Georgia On My Mind,' 'Every Breath You Take' and a dozen other tunes.

Play Along mode provides a selection of sampled instruments (synths, pianos, horns, etc.) which with to play the same 17 music tracks' melodies atop the CD music in various ways. Either hunt and peck the notes on your controller's keys, guided by a screen metronome



Music Maker's 'Drum Along' screen.

and colored prompts, or use a safer one-key approach that won't make your efforts sound completely lame. As you play along, you can turn on *Music Maker's* record feature to keep track of your key presses, should you want to replay them and embarrass yourself in front of friends later. This is party-fodder, if you haven't figured that out yet. At-home entertainment for Karaoke jukebox sing-along fans.

Moving on, Drum Along presents four different sampled drumkits. Choose one and you can bash away at them on top of your own favorite music CD's tracks as the number keys on your controller each invoke a different part of the kit. Drum Along is the easiest part of *Music Maker* to use, and, for my money, the best fun on the disc. If you're often tempted to play 'air drums' while listening to music, you'll enjoy this.

Lastly, there's the Quiz Time music game. Designed for two to four players only, (apparently *Music Maker's* developers didn't think anyone lives alone) it's pretty standard-fare Trivial Pursuit™ type gaming.

Music Maker is inoffensive and docile family-oriented musical entertainment, 'suitable for all ages' as the cliché goes. It's like going to a chaperoned party. Though *CD ReMix* is more challenging to use and master, it's also much more contemporary, cutting-edge, and geared towards those of you who yearn to apply some inventive creativity into programming your music.

||||| ◆ |||||

***Music Maker* is family-oriented entertainment. *CD ReMix* is more challenging, contemporary and cutting-edge.**

||||| ◆ |||||

Music Maker



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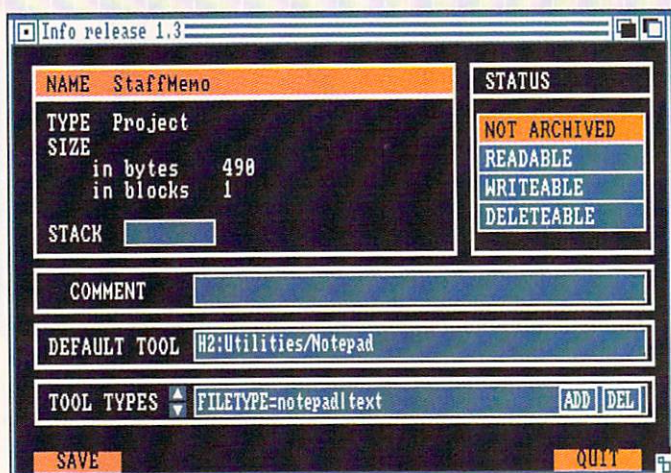
ARexx: Seven Come Eleven

Mark R. Brown uses ARexx to solve a problem and generate some real-world data.

Workbench Wonders: It's UI-GUI-Good!

by Chris Zamara and
Nick Sullivan

If you've used the Amiga at all, you've probably seen icons on the Workbench and used them to run programs with a double-click, copy files using click-drag-release, and do other basic operations. The Workbench's icons can do a great deal more than that, however, and contain powerful mechanisms that can give the easy 'point-and-shoot' Workbench interface much of the power of the CLI (command-line interface).



The icon information window under 1.3. The 2.0 version is similar.

.info files

An icon appears on the Workbench for any '.info' icon file that may be on any of the mounted floppy disks, hard drive partitions, RAM disk, or other volumes.

Consider a hypothetical wordprocessor program called 'GizmoWord.' It shows up on the Workbench as an icon because there are actually *two* related files: the program itself, called 'GizmoWord,' and the icon file called 'GizmoWord.info.'

The specially-created icon file tells Workbench the appearance of the icon and where to position it on the Workbench screen. The name of the icon file tells Workbench what program to run ('GizmoWord') when you double-click on the icon.

Tools and Projects

The wordprocessor icon is called a 'Tool' icon because it corresponds to an executable program, which is called a 'Tool' in Workbench jargon. Now suppose you create a document in the wordprocessor, and save it using the file name 'StaffMemo' (by choosing 'Save' from the wordprocessor's 'Project' menu). When you look at the Workbench screen now, you'll see an icon for the 'StaffMemo' document, which is different in appearance from the GizmoWord Tool icon. When you double-click the StaffMemo icon, the GizmoWord program will be run, and the StaffMemo document will be

automatically loaded in.

The StaffMemo icon is called a 'Project' icon because it corresponds to a document, or picture, or whatever project you create using a Tool. Like a Tool, a Project consists of the project file itself ('StaffMemo') and an associated icon file ('StaffMemo.info'). Unlike a Tool, however, double-clicking the StaffMemo icon does not cause Workbench to run a program called 'StaffMemo.' Instead, it runs the program used to create the Project, in this case 'GizmoWord.' How does Workbench know the name of the program to run?

Default tool

Every project icon contains the name of a 'Default tool,' the program to run when the icon is simply double-clicked. When you save a project, the default tool is normally set to the name of the program automatically. It is a simple matter to change the icon's default tool yourself, however, if you want to make the icon use a different program or a program in a different drawer or disk.

To change a project icon's default tool, just click once on the icon to select it, then choose the *Info* item in the *Workbench* menu. (With AmigaDOS V2.0, it's *Information...* in the *Icons* menu.) The icon Info requester that appears lets you view and modify a number of characteristics about the icon and related file.

The default tool will be shown in a

.info technical support

text box; you can click on this and change the name of the default tool to the name of the program that should be run when the icon is double-clicked. Click on the SAVE gadget to remove the requester and update the icon with the new information.

If the Tool is not in the same directory as the Project, the default tool name must specify the program exactly, including the entire pathname. So, if the GizmoWord program is in a 'WP' directory on your hard drive volume 'DH0:', the default tool would be 'DH0:WP/GizmoWord.'

AmigaDOS 2.0 makes it a little easier to specify a default tool. The current command path is searched, so that if the 'WP' directory was in your path (usually set up in the Startup-Sequence), you would only have to specify the name 'GizmoWord' instead of the entire pathname 'DH0:WP/GizmoWord.'

You can override a Project's default tool by extended selection of a Tool icon along with the Project icon. Simply first click on the desired Tool icon, then double-click the Project icon while holding down either Shift key on the keyboard. This will force the use of the specified tool regardless of the Project's default tool. For example, if you create a document with GizmoWord, but wish to load it into the Notepad text editor, simply click on the Notepad icon, then hold Shift and double-click on the Project icon. The Notepad program will run and automatically load in the selected Project. The default tool in the Project icon remains undisturbed, so a subsequent double-click of the Project icon will still launch the GizmoWord program as before.

Double-clicking a Project

As you've seen, double-clicking a Project icon with a properly set up default tool causes Workbench to run the specified tool automatically. Workbench then sends a 'message' to the program telling it about the Project icon that was used to launch it. It is up to the program to do the right thing. In most cases, this means loading a project of the same name as the icon (without the '.info' extension, of course).

Most programs that create icons for

Extended Selection

Example: printing two text files

1. Click on Tool icon



2. Hold down either SHIFT key

3. Click on first Project icon



4. Double-click on second Project icon



Printing two files is easily done using only mouseclicks.

projects will, in fact, handle double-clicked projects in this way. It is important to realize, however, that this is done by the program itself and not by Workbench; once Workbench tells the program about what project has been used, its responsibilities are over.

When you launch a program by double-clicking a Project icon, keep in mind that a new copy of the program will be loaded from disk and executed. If the program is already running, this is generally *not* the way to load in a new document; you should choose 'Open' in the program's 'Project' menu instead. Otherwise, you will run multiple copies of the program, using up additional memory for each one. For this reason, launching a program by double-clicking a Project icon is less useful for things like wordprocessors, where documents are loaded and saved often. On the other hand, Project icons are the ideal method for launching one-shot applications like picture viewers, text display programs, and sound-effect or animation players.

Tool Types

Underneath the default tool name in the info requester lies the 'TOOL TYPES' box. In AmigaDOS V2.0, a scrolling list is used, but the principle is the same. Any number of tool types can be specified, and each supplies a single piece of information to the tool.

Try a working example: bring up the icon Info requester for the 'Notepad' tool (normally found in the 'Utilities' drawer of the Workbench 1.3 system disk). Click on 'ADD' to add a new tool type, and enter 'WINDOW=010,010,600,100.' Click on SAVE to save the new tool type in the icon. Now, when you run Notepad by double-clicking its icon, the window opens at the position and size specified by the WINDOW tool type.

Here are some other tool types recognized by Notepad: FONT lets you change the default font, e.g. 'FONT=garnet.9.' FLAGS lets you set default options e.g. 'FLAGS=draft|nowrap' to turn off automatic wordwrap and use draft quality print mode. Any or all of these tool types may be placed in the icon, and the tool types can be edited or deleted using the controls in the requester. The new V2.0 requester is more convenient, since it can display several tool types at once.

How do tool types work? As with project icons launching a program, Workbench simply gives the tool type information to the program being launched; it is then up to the program to interpret the information and act on it appropriately. Some programs may not use tool types at all - you would not be prevented from entering tool types into the icon, but they would simply be ignored. If a program does use tool types, they





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Featured Disk

WB71A&B: The A64 Package - A very complete Commodore 64 Emulator. Supports any CPU and is fully compatible with WB2.0. Now that you've traded in your C64, don't loose all that software that took you years to compile. This software emulator actually runs faster than a 64! Amaze your C64 friends! Two disk set, counts as two.

NEW DISKS

VO5: Modeling - Vertex allows you to create 3-D objects without using the abstract X, Y and Z views. Saves in Sculpt-3D/4D, Turbo Silver, Imagine, LightWave, GEO and Wavefront formats. MagicTween will metamorphose any two pictures by automatically animate the "in-between" frames.

VO4: Video & Anim - Video DB will catalog all of your videotapes. State is a sharp graphic of a slate for your productions. Cynopsis splits, makes and gives info about ANIMS. RTAP lets you play large ANIMS on small memory machines.

VO3: Image Utils - let VideoToolsOnTap let you tap into the video power of your Amiga for fades, color and greyscales as well as a plethora of other indispensable video functions. TitleGen will do professional crawling titles. JPEG converts JPEG<->24-bit IFF with amazing compression. ImageLab performs special effects on IFFs.

VO2: Stillstore - Used to create the "over the shoulder" graphic inserts at the 1:30 news.

VO1: Graphics - Picbase will let you view and track ALL of your IFF pictures over all of those floppies! FreePaint is a Deluxe-Paint workalike. Agraph is a powerful utility to produce snazzy graphs.

FD74: Arcade Series - RingWar is an "Outer Limits" clone with vectorized graphics. MotherLode is a "Lode Runner" clone with 50 levels! In BlitzTanks, they're coming at you from all directions!! Call in air strikes and use your heavy artillery to survive!

FD73: Arcade Series - Intruder Alert! is a MULTI-life "Berserk" clone. Features smooth gameplay, great graphics & digitized sound fx. **FD72: Sword of the Warlock** - This is a demo version of a great public domain graphic dungeon adventure game. The adventure spans three diskettes and allows two players to go adventuring. The game has a "Bards Tale" feel to it. Three disk set, counts as 2. Requires 1 meg of RAM and 2 floppy drives or HD.

FD71A&B: Star Trek: TNG Trivia Challenge - So you think you know The Next Generation, huh? Complete with fantastic sampled sounds and digitized images, this game even looks and sounds like a genuine Star Trek terminal! VERY thorough and complete! Counts as 2 disks.

FD70: SpaceGames - Contains AmigoGold, >finally! an Asteroids game that takes advantage of the Amiga->totally configurable with great sound and graphics. In Cosmostruction the object of the game is for each Cosmostruction team to acquire the most points while construction energy ducts between the space station and planetoids.

FD69: MindGames - Had enough of shoot-em up blasting games? Relax and let these 21 games exercise your mind instead of your wrist.

FD68: Potpourri - Eternal Rome is a strategic simulation of the Roman Empire including military, diplomatic, political, economic and social factors. Lord of the Stars is a board strategy game for 2 players. In Moonshine, you've got to get the hooch across the state line--a great rolling, scrolling driving game!

FD67: Arcade - Includes Llamatron a well-done "Robotron" clone. Hate is a "terrific" commercial grade Zaxxon clone with multiple levels/worlds and smooth diagonal scrolling...a 10!

FD64: Games - Wizzy's Quest - a "great" 50 level game with great graphics. Cubus - a 3-dimensional Tetris type game (rotate and move in 3 dimensions). Husker Du - Colors and pattern rather than shape in this Tetris-esque game; 5 screens and 3 levels of difficulty. Requires Fat Agnus (1 Meg of Chip)

FD62: PomPom Gunner - An extremely smooth and well done World War II punner simulation. Requires 1 megabyte of memory.

WB109: VerseWise - Display, search and output The New Testament to text files or your printer.

WB108: OctaMED - This breakthrough program doubles your Amiga's sound capabilities from 4 channels to an ear-popping 8 channels! All the renowned editing capabilities of MED plus 4 more channels! If you thought your Amiga sounded good before...you ain't heard nuthin' yet!

WB107A&B: Educational - Drawmap is a program that generates representations such as hemispherical views, and orbital views of the Earth's surface, complete with national boundaries. Screens can be printed or saved to disk as standard IFF files. Full user-configurable online help facility. 68020+ version included. 2 disk set, counts as 1!

WB106: Home Manager - This is a great all-in-one address book with an autodialer/notespad/fo-do list/appointment scheduler/home inventory database and phone number dialer. Slightly crippled demo version.

WB105A&B: Workbench 2.0 Extras #2 - See the top right of page 2 for more info on these priceless utilities to make Workbench 2.0 life!

WB104: GrabBag - Q&A Trivia (requires AmigaVision) is a trivia game for 1/2 players...add your own questions to customize the difficulty level! Sysinfo is great for telling you how fast/slow your computer is,

what boards are installed, chipsets, etc. AmiGazer will plot stars in the heaven from any position on earth complete with magnitudes and constellation identification.

WB103: Music - Contains 12 "great" Soundtracker/MED music MDules...complete with programmable shuffle player...8 bit audio never sounded so hot! Two disk set counts as two.

WB102: Communications - Contains the programs NComm 1.921 and VT100-29B. Zmodem protocols, XPR protocol support, full VT100 emulation. NComm's script language is so powerful it comes with a script file that creates a full featured BBS system.

WB101: Chemesthetics - is a program that displays molecules as a calotte model. This kind of display contains a certain esthetic attitude, even extremely poisonous molecules like nicotine and doxine look quite nice.

DD83: IBM - This demo, IBeM, will allow the running of MS-DOS software with Amiga programs!!! Comes complete with programs to turn your Amiga floppy drives into 720K IBM compatible drives.

DD82: Unix - Contains a working demo of Minix - a Unix workalike. Minix is system call compatible with V7 of Unix.

DD81: City Planner - This is a real time war battle game. Metro you play the role of a city planner. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. Very very habit forming.

FD6: GAMES! - This disk is chock full of games including: Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addictive, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

FD7: PACMAN - This disk contains several pacman type games including: PacMan87, MaxMan and Zonix.

FD9: Moria - This has great graphic controls, multiple spells, similar to Larn and Hack. Play time several weeks!

FD10: HackLite - A dungeon adventure game. Considered a must-have classic. This is the second release of this game on the Amiga. Great graphic interface. Play time several weeks!

FD11: Las Vegas and Card Games - Las Vegas Craps. The best Las Vegas Craps simulation ever written for any computer. Contains extensive HELP features. Also Thirty-One, VideoPoker and more.

FD12A-FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranoies, and others.

FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk, Hball - an arkanoid/breakout type game. Trax - a Qix type clone.

FD17: Educational Games - This disk includes several games for the younger members including geography, math, science, and word games, also includes Wheel of Fortune.

FD20: Tactical Games - MechForce(3.72): A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.

FD26: Arcade Games - Marble slide is a commercial quality game--similar to a Lucas game named PipeDreams, excellent playability and entertainment. Mutants--a small version of the same arcade game. SuperBreakout is a Pong/Arkanoid type game.

FD27: Arcade Games - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as frogger, and SBreakout the original breakout with more.

FD29: Shoot'em up's - WWII - you're the pilot of a WWII plane flying through enemy territory, you've just been spotted, good luck on your mission. SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.

FD31: Games! - Air Traffic Control - a good ATC simulation game, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrinth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.

FD32: Flight Simulator - Includes an instrument flight simulator for a DC10.

FD33: Arcade Games - Freddy a mario brothers type of game, Gerby's a great practice game, Pipeline a German interpretation of Pipe Dreams. Tron a light cycles version, and wretoids a wonderful version of asteroids with a hilarious twist.

FD35 Omega (v.1.3) - A new outstanding dungeon and outdoors adventure game in a similar vein as hack, rouge, and moria. This version is considerably faster and better than all previous versions. Play time several weeks or months.

FD37a & b: Tactical Games - Empire (2.2w) This great game comes highly recommended. With a full-graphic front end.

FD38: Games - Cribbage Mastin - A great cribbage game and tutor, Spades - a well done card game, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

FD39a & b: Star Trek, The New Generation - This is a, completely

different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Now with English instructions. Excellent!!! Counts as two disks. Requires 512k memory.

FD44: Game - Mechfight is an out of this world role-playing adventure comparable to hack and moria. The setting, interplanetary colonies and space stations. In your quest to explore the world, take time out to liberate bad guys of their most valuable possessions, engage in a mortal combat or two against robots and alien life forms, pick up a new armig 9000. Most of all, don't forget to stay alive.

FD49: Chaos Cheats - This disk contains an everything you wanted to know about cheat set for Chaos Strikes Back, including full maps, spells, object locations, super characters and more.

FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

FD52: Classics Games - PetersQuest a well done Mario brothers type of game, Jymbo a two player missile command clone, and Vstank a tank commander game.

FD53: Great Arcade - On this disk is a wonderful implementation of the ever popular classic arcade game Defender. Also contain Air Race a WWII flying ace arcade game, and Psychoblast new creation idea game.

FD56: Arcade - Includes SpaceWar, HueyRaid is a well done helicopter arcade game. PowerPong's a great expanded pong game.

FD57: Arcade Games - Includes 2 truly commercial quality games. MegaBlast, an Arkanoid-ish game, features 5 musical scores, multiple levels and adding gameplay. Gravity Attack is a psychedelic trip through several different worlds--each distinctly different.

FD58: GAMES! - Includes Steinschlag; a great Tetris clone from Germany with music. SCombat: simulate battle between up to 40 players & monsters. Imperium Romanum: Battle up to 4 players for control of the Mediterranean in this Risk-esque game.

FD59: Game Potpourri - Xenon III is an almost exact clone of the commercial game of the same name...a great shoot'em up. Crossword will take lists of words & automatically generate word search puzzles for any Epsom compatible printer.

FD60: Games - In Nebula, race over a 3d world to destroy enemy installations. Interferon; a great Dr. Mario clone. Enigma; is it a game or a puzzle?

FD61: Games - Solitaire; great graphics, plays two versions. Kluge; an interesting piece of eye candy. Extreme Violence; 2 player kill or be killed game. YATC; A Tetris clone with Artificial Intelligence. Genesis; create realistic 3d fractal worlds.

WB4: Telecomunication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily. Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols, Comm (1.34) - Last version of one of the best public domain communications programs ever made on the Amiga, Handshake (2.12a) - Handshake is a Full featured VT52/100/102/220

WB5: Fonts #1 - Several fonts (35) for the Amiga, also included are five PageStream fonts and ShowFont - a font display program.

WB6: Video Fonts #2 - ShowFont(4.0) This program allows you to quickly and painlessly view all 256 characters in a typical font. Large AmigaDos system fonts (many up to 56pts).

WB7: Clip Art - This disk is loaded with black and white clip art. It includes, trees, watches, tools, US and State maps, and more.

WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMinster, IconLab, and others great utilities to help generate icons.

WB10: Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and Zervirus III.

WB11: Business - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and uch more.

WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!

WB13: Printer Drivers and Generator - over 70 different drivers, and if these don't do it, with PDRiv you can make your own.

WB15: Business - This disk contains a spreadsheet, a database, a project management program and financial analysis (stocks).

WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendars/scheduler, a rolodex program, and pennywise a good "Cash Book" accounting for home or office.

WB18: Word Text Processors - This disk contains the best editors. Includes, TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features, Txe(v2.8) an enhanced Emacs type editor, and a spell checker.

WB20: General Interest - DiskSav V1.42 a disk recovery program for all Amiga file systems, FixDisk V1.0 another file recovery program with features DiskSav doesn't have, 3DLook gives a 3d appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer - trace any part of an image.

WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with DPaint and WYSIWYG word processors.

WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical program plotter. Can plot any user defined function, and Surf2, produce awesome pictures of objects one could turn on a lathe. Can also make off image files on any surface it can draw. Now compatible with most 3d packages, and VScreen - makes a virtual screen anywhere, great for DTP.

WB25: Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to do harddisk and floppy disk backups, FileMast - a binary file editor, LabelPrinter - Disk label printer with very powerful features.

WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.

WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAP, and Sound - a great IFF sound player, will play anything. Try this disk.

WB33: Circuit Board Design - several terrific routines for the electronic enthusiast, including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.

WB34: Utilities - Several well done utilities, some will require moderate knowledge of a CLI or Shell for setup, Chatter Box - this one will play any user defined sound after any event (ie. disk insert, mouse click, disk removal...), Artm - The Amiga real time monitor, gives you full control of the Amiga OS, very powerful program, Helper - help program to make learning the CLI easier, and more!

WB35: 3d Graphics - This disk contains several neat programs to use with your 3d modeling/raytracing programs 3dFonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3dShape - create 3d shapes from any image, 3dAnim - create 3d animations preserves pallet, and World3d - a demo program that front end for a 3d image generator.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images

that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbench screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one.

WB37: Educational - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 15.
WB38: Plotting and Graphics - Plotxy is the most powerful full featured plotting package. Used by many colleges and universities. A welcome addition to our library! Highly recommended. Plans - a incredibly well done Computer Aided Drafting program, very full featured. Tessellator - a program that helps generates fantastic looking, recursive M.C. Escher type pictures.

WB39: Music - Intuitracker is a German offering of an exquisitely well done program that allows you to play music on your Amiga with CD like controls. Lets you strip out music from your favorite games or others and include them in your music library.
WB40: Music - "CD on a disk", 90 minutes of modern music on this well presented collection. Requires 2 drives or HD.
WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program. Ver. 3.10.

WB43: Business - This disk contains AnalytCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Requires 1.2 MB of memory!
WB46: Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads, ...), people, and transportation.
WB48: Clip Art - HighRes clip art with the following motifs - Holidays, music, medical, and misc.

WB49abc: Animation Sampler - On this three disk sampler set (counts as two disks) are some of the best animations that have been created over the last three years. Several examples of "Movie" type animations some with spectacular raytraced reality (coolroby, watch, spigot and egg). Also several european style or "Demo" animation with incredible graphics and outstanding electronic music (akrlight, copersine, doc, dps2010, impact, and logodemo). These truly show off the creative edge of an Amiga!

WB50: Animation - Seven of the best european style animations or "Demos", including - scientific 451, subway (a U.S. entrant, also our favorite), sunrise, thirddemo, night, waves, and wow.

WB53: Graphics - Raytracer programs generate absolutely stunning realistic looking planes, rockets, buildings, and surreal images often consisting of highly polished spheres and objects. C-Light is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titrer. Great video scrolling, wbes, special effects, and more...

WB54: Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio - a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features. Lila - with ease, print ASCII files to a PostScript printer, and many more.

WB55: Application - XCopyIII - a full featured disk copier, make backups of copy protected disks. RoadRoute - find the quickest route

program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.
WB82: Animations - Four full length, well done "movie" style animations. Including, Coyote, Juggler, GhostPool, and Mechanix. Two disk set, counts as one!

WB83: Computer Art - This disk has some of the best Amiga generated computer art that we have collected in the past 5 years.
WB85: Graphics - Contains several programs for manipulating 24 Bit color images (ham-e) and a rather nice Ifr Image processing package.
WB86: Amiga Vision - Contains the Centurion Press, An Amiga newspaper by Lou Wallace.

WB88abc: The Complete Bible - A three disk set, with the entire text of the New Testament and Old Testament. Great search utilities. Three disk set, counts as three.

WB90: Rippers, Strippers and Beats - For the Amiga music enthusiast, this disk contains many programs designed strip music from your favorite games and programs. Music can then be played with your favorite Pd Music program. Also contains Drums, a very nice drum machine. This disk requires some knowledge of the CLI.

WB93: Workbench Extras #2 This disk contains the utilities that Commodore should have shipped with the Amiga: VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), GOMF (a gurbuster) and PrintStudio.



It's Here! It's Here!
 Release 2.04 of AmigaDOS for the A500/A2000!!! Includes ROMs, disks and full documentation. Requires installation. U.S. orders only.
\$95.00

WB105A&B: Workbench 2.0 Extras #2

This set contains the programs that should have been included with WB 2.0. These powerful utilities take full advantage of the many new capabilities that are available in Workbench 2.0

Tool Manager - a "wonderful" utility to add programs to your TOOL menu, create a collection of icons on the workbench to easily launch frequently used programs...and much, much more! A true must have utility!!!-ALL of our Amigas rely heavily on this utility!

Icon - Enhances Workbench's "Show All" to display over 40 distinct icons for different types of files (text, graphic, source files, sound samples, libraries, etc., etc.)

Font Editor - Create/edit bitmap fonts with full color support!
Screen Blankers - ala fractals and splinters! No more boring black screen. Colorful, interesting and highly hypnotic effects!

Requester Enhancers - no more stale "please insert volume" requesters--these are animated requesters for all of the system's requesters.

CPUBlit - speeds up text displays for owners of 68020+ CPUs.
Wallpaper - put workbench on top of any IFF picture!

SafeReboot - adds a safe way to reboot your computer...can greatly reduce disk validation errors!

SysInfo - see what's under the hood of your Amiga and see how fast they are.

Public Screen Utilis - allow several separate programs to share the same screen.

Two disk set, counts as two disks.

release including the full user docs, the full Developers guide. ARP is the official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your system easier to use from the CLI.

DD57: Advanced Utilities - Msh - like Cross-dos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and vice versa. Also several utilities that improve your startup-sequence, plus 25 more programs.

DD62: Basic and Xscheme - Cursor - a full featured Amiga Basic compiler, basic and text - several wonderful routines to help in basic programming, and Xscheme - an interpreted object oriented language.

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from one city to another, highway description included. Diary - a diary program like "Dougy Howard M.D., Cal - a calendar program, Magman - a database tailored to maintain records on articles and publications.

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will be explained in that program's documentation.

Project Tool Types

Setting Notepad's tool types was done in the Notepad Tool icon. But Project icons can have tool types, too. With Notepad, that means you can use one set of options when the program is run on its own, and a different set for each project ('note') you save.

To see how this works, try an experiment:

- 1 Run Notepad by double-clicking its icon. Look at the version number in the title bar. You must use at least Version 2.2 (the one released with Workbench 1.3) for this experiment.
- 2 Type some text into the Notepad editor, and select a font - say, Diamond/12 - from the 'Font' menu.
- 3 Make sure the 'Global font' option is turned on (in the 'Format' menu), causing all of the text to change to Diamond 12.
- 4 Save the document (choose *Project/Save As*) using the name 'ram:NPtest.'
- 5 Close the Notepad window or move it out of the way so you can double-click the 'Ram Disk' icon on the Workbench. The Ram Disk window should display the 'NPtest' icon for the Project you've just saved.
- 6 Click on the NPtest Project icon and select *Workbench/Info* to bring up the icon requester. Browse through the tool types using the tool type down-arrow gadget.

Notice the tool type 'FONT=diamond.12?' You didn't enter the tool type into the icon requester explicitly (though you could have), but *Notepad* has put it there for you automatically! This ensures that the text is displayed using the Diamond 12 font when you double-click the Project icon. In other words, Notepad is using the icon as a way to store Project information without modifying the saved 'test' file - the document - itself. This technique is used by many programs, and serves as a kind of 'configuration file' that can be stored with individual projects.

Notice that Project icon tool types can work in conjunction with the tool

types stored in the Tool icon itself! How this is handled depends on the application, but usually the Project icon overrides the default values established by the Tool icon. Workbench just passes on Project icon information, and the application decides how to use the tool types in the Project icons, if at all. Some applications will ignore Project tool types, while others may have special tool types that work in the Project icons and not in the Tool icon.

Extended selection

We used extended selection earlier to override a Project icon's default tool. Extended selection can actually be applied to any number of icons, allowing you to use any number of Projects with a single Tool!

Before seeing how this works, remember what is going on: Workbench simply runs the Tool and then tells it about all of the Project icons. The Tool may choose to ignore multiple Projects, and many applications do. Applications that can handle multiple projects, however, will usually load in all of the Projects specified by extended selection!

A good example of using extended selection for Project icons is the PrintFiles utility in the Utilities drawer on the Workbench 1.3 boot disk. PrintFiles simply sends text files to the printer, letting you print documents already created with Notepad or another text editor.

Suppose you use Notepad to keep a list of things to accomplish for the week, saved in a Project file called 'WeeklyToDo.' Another project called 'Appointments' also sits in your Notepad drawer (organized person, aren't you?) Now it's late in the day, and you need to start these documents printing while you work on other things. Rather than load each into Notepad and print it separately, you can use PrintFiles to print them both.

Click once on the PrintFiles Tool icon, then hold down either Shift key on the keyboard. Click once on the 'WeeklyToDo' Project icon, then, still holding the Shift key, double-click on 'Appointments.' PrintFiles will begin printing the first file, and when it is done, will eject the page (Notepad saves a form-feed at the end of each note) and print the next.

The above operation is equivalent to using PrintFiles from the CLI and typing each of the document names as command-line arguments, like this:

printfiles WeeklyToDo Appointments

In fact, Projects and tool types are in many ways an exact analogue to command line arguments and switches. This is in keeping with the Amiga philosophy of having it both ways: a modern icon-based user interface working alongside a traditional command-based one.

An extreme example

To see how Icons, Projects, and Tool Types can be used in an application, consider the behavior of Gold Disk's *TransWrite* wordprocessor. (As *TransWrite*'s authors, we must confess that this is not an example chosen entirely at random.) In order to keep its documents 'pure' so that they can be used with other text editing programs, *TransWrite* saves additional information about a document in the Project icon's tool types.

If you look at the Project icon for a *TransWrite* document, you'll find tool types defining everything from the size and position of the document's window to the position and width of the cursor. There are 24 tool types in all, and by reading them when the project is being loaded, *TransWrite* is able to set up the document exactly as it was when it was saved, including the state of all options.

To see the tool types at work with extended selection, it is only necessary to save several *TransWrite* documents, each with different size and position of window, different text and page colors, etc. Now, when you extend-select all of the Projects along with the *TransWrite* Tool icon, all of the windows will open up in their original positions, colors, and cursor position, and each document will have its options set up as they were originally.

The interesting thing about the use of tool types in this way is that you never actually need to edit the tool types in the icon manually, although you can if you wish. The tool types are just a way for the Tool to store extra Project information beyond what is stored in the project file itself.

The Programmer Perplex: DOS 2.0

by Jim Butterfield

So you write programs for the Amiga? And now AmigaDOS 2.0 is here? And you don't know if you should be undertaking some sort of transition?

Commodore CATS says: stop whatever you're doing and start coding for AmigaDOS 2.0 right now. That's easy for them to say, but your questions may be: How? At what speed? With what retro compatibility? There are several strategies you could adopt.

Strategy One: Ignore the whole thing. AmigaDOS 2.0 is supposed to be upward compatible. So, if you have written sensible programs, they will continue to run on 1.2, 1.3, 2.0 or whatever. No need to even show that you've noticed DOS 2.0. Maybe you'll trim up your icons to look a little better with 2.0 colors, but otherwise it will be business as usual. This is a workable strategy, but you'll miss out on some of the flashy new 2.0 features.

Strategy Two: Assume that everybody will go to 2.0 in the near future, and cut over now. Your program can easily check to make sure 2.0 is in place, and print a message if the user is not up-to-date. This is workable, but might get your programs off to a slow start. DOS 2.0 is only just coming into the user base.

Strategy Three: Write two programs, one for 2.0 and one for pre-2.0. Twice the work? Not really. A conditional compiler, assembler, or linker can produce the two packages from a common coding kernel. You'll have to write some system-customized modules, of course. A good idea, but how do you distribute them? Both on one disk? Your intelligent users wouldn't load the wrong program, of course... or, if they did, you could have the programs do their stop-and-print-warning routine.

Strategy Four: Write a single program that detects what kind of system it's running on, and invokes appropriate code according to that system. It seems ideal. Like Strategy Three, it will

Figure 1

	+24	More Library stuff
	+22	Revision
	+20	Version
	+14	Flags, Library size
Library Base	+0	Node structure
	-6	"jump table"

Within the structure of every Amiga shared library there are two words (two bytes each) giving the library's Version number (important) and Revision number (not usually important).

This number is checked when the library is opened (via the Exec OpenLibrary call). It may also be tested by any program using the library.

take more coding work. The main problem is that the resulting universal program is likely to be rather big, since it contains code for both options. You can get around that, too, by the use of overlays, special libraries, or multiple tasks. But many programmers feel more comfortable writing a unified program.

Universal 2.0?

The success of some of the above strategies depends upon the answer to the question: Will AmigaDOS 2.0 completely replace earlier Amiga operating systems? The answer, in my opinion: to a large extent, but not totally.

AmigaDOS 2.0 is so user-friendly that most Amiga owners will want to move to it. Both Workbench and CLI/Shell are enhanced to help the user. More, the operating system comes with new 'hooks' that encourage and assist programs in user-friendliness; a little programming effort will generate code that communicates in a useful and helpful way.

I understand that the Amiga 3000, which is designed as an AmigaDOS 2.0 machine, is very popular in the market-

place. That's another sign that DOS 2.0 is likely to take hold quickly.

For existing machines, a 2.0 upgrade package is now available. It's attractively priced, at least in the USA and Europe. Another reason why the switch to 2.0 looks promising.

Why would anyone hold back? There are several possible reasons. First: some machines are not capable of doing the upgrade, at least in their original hardware configuration. The Amiga 1000 can't hack it without help, such as a Rejuvenator board. Second: a few programs may not be able to make the transition to 2.0. If one such program happens to be a user's main workhorse, that would hold back an upgrade.

There's a supplementary consideration for program-writers: the Commodore CDTV system, as currently sold, is a Workbench 1.3 system. A programmer who views CDTV as a possible platform for development won't abandon the pre-2.0 coding style. It's quite likely that CDTV, too, will be moved along to DOS 2.0; but it hasn't happened yet.

The 2.0 Advantage.

The user sees many good things in the 2.0 interface. Here, I'll concentrate on what the programmer sees when working with 2.0. These facilities will allow the programmer to exploit new areas that will benefit the program's user interface. The list is long - I'll just try to touch on a few highlights.

New libraries streamline and standardize user interaction. ASL helps with file and font requesters. LOCALE eases the job of fitting multiple languages to the same program. COMMODITIES expedites input-stream work such as is performed by 'hot keys' or 'screen blankers.' GADTOOLS provides a simple way to get and use standard gadgets and menus. And there are other new libraries including UTILITY, which performs various odd jobs such as string handling and arithmetic.

Existing libraries have been dramatically upgraded and expanded. The number of system calls has about doubled (and there were *plenty* before 2.0). In particular, the DOS library has exploded; many features that were available only through DOS packets are now standard library calls. Intuition, too, has gone through a major upgrade; that's not surprising in view of the rich new array of screen and font options.

I could go on, itemizing new device handlers, new system organization involving such things as notification, outline fonts, and the new chip set. Perhaps it's better to say that it's a whole new game with a whole new set of options.

One more item that changes the concept of Amiga program structure: ARexx. This language will be a standard part of 2.0 systems. You probably know by now that ARexx serves not only as a free-standing program language, but also does the job of inter-process communications. To these two functions, I might add a third: *intra*-process communications; a program talking to itself! Here's the idea: it's often easier to use ARexx as a user macro language, internal to the program, than to try to devise your own custom macro language. Consider that ARexx-based macros are likely to be more readable than customized mate-

Figure 2

```
GfxBase = OpenLibrary("graphics.library",36L);  
if (GfxBase == 0L) ....
```

V36 or later not available

A. Open the library **ONLY** if it is version 2.0 or later.

```
GfxBase = OpenLibrary("graphics.library",0L);  
if (GfxBase == 0L) ... [can't find ANY Gfx library]...  
if (GfxBase --> Version < 36) ...  
    [found library, but not 2.0 version]
```

B. Open the library in any case, but test to see if it is version 2.0 or later.

Two ways of checking that a library is version 2.0 or later. Method A opens the library only if the version number is sufficiently recent; an older or non-existent library will result in "failure". Method B opens the library if it is there at all; subsequently, the programmer checks to see what version is there.

"Real" C programs would have somewhat more detail than that shown above; for example, the GfxBase value would be "cast" before being stored, and field Version would likely be coded lib_Version.

rial, and once devised, can be easily extended for external (interprocess) use.

Considerations

The first thing your program must do about AmigaDOS 2.0, if it does anything at all, is to find out if it's there. That's not hard to do, since all existing libraries have a version number. Figure 1 shows where this 16-bit version number is stored, together with a less-important 'revision number.' If this number is 36 or above, you may be sure you're in a 2.0 environment. Advanced technical types note slight variances between versions 35, 36, and 37; for most work you will do, testing for 36 and above is quite safe.

If your program needs to know about 2.0 right away, it could check the Exec library, which will be in place and running. Exec's version number will tell the story. Or, if your program doesn't need to test right away, such tests can take place as libraries are opened with Exec call OpenLibrary. As Figure 2 indicates,

you may specify 'I want a library at least as recent as version 36,' and you'll either get it, or the zero pointer which indicates failure. If you can't get the library version you want, your program may choose to beat a hasty retreat.

On the other hand, you may be designing your system to run in any environment. Open your chosen library with a specification of version 0 or later, and you'll get it if it's there at all. Later, your program can test the version number to see if it may use some of those marvelous new 2.0 function calls.

Libraries such as ASL won't be there at all, of course. In this case, your program will have to do such things as file requesters the hard way. Perhaps it will have to depend on the ARP library, or perhaps it will use custom code. It might even grouchy ask for the exact file name, perhaps adding the extra comment, 'Isn't it time you upgraded to 2.0?'

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ARexx: Seven Come Eleven

by Mark R. Brown

It was one of those simple, annoying problems I seem to run into all the time: I had a data plotting program to review and no data to plot. The obvious solution was to write an ARexx program to generate some data. But I didn't just want random X and Y coordinates. I wanted to process some real-world figures - data that might fit a real curve, with some meaningful error bars. It immediately occurred to me that a simulation of some real-world activity would fill the bill nicely. And what better real-world simulation than gambling?

Gambling 'methods'

Everybody and his fast-talking cousin Eddie has a scheme for 'beating the house' at its own game. Problem is,

none of them work. The simple truth is that there's a house advantage built into each and every established casino game, and you *can't* beat the house. But you *can* devise systems that keep you from making stupid mistakes, and thus losing at a rate faster than the built-in house advantage.

Because the house advantage on the craps table is relatively low for many bets, it's my favorite casino game. So I decided to write an ARexx program to test my craps 'method' for maximum survival, while at the same time generating some significant real-world data to run through *MultiPlot*. My craps method is a simple one: make all the best bets possible and avoid the bad ones like the plague. I've read about a dozen books on casino gambling, and they all say that the best bets on the craps table are the 'backup odds' bets you can make on a number once it is established as the point. As a matter of fact, these are the *only* bets you can make on a craps table that are offered *without* a house advantage! This means you

can actually get a true odds payoff on these bets. The only house percentage on them comes from the passline bet you have to make up front in order to buy the privilege of making a backup odds bet.

Program Design

So I decided that I wanted my program to do two things: (1) Make a passline or come bet on every single throw of the dice to generate the maximum possible table action. (2) Make the maximum allowable backup odds bet on the point thrown.

I tailored the program to Iowa Riverboat gambling rules, since the riverboats afford me my closest real-world chance for using the knowledge generated by this test. Those rules limit passline bets to \$3, and backup odds bets to 'single odds,' which means the next highest dollar amount that allows a proper payoff without making change. What this all boils down to is this: I could make a \$3 passline or come bet

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on each roll of the dice, and make backup bets of \$3 on a point of 4 or 10, \$4 on 5 or 9, and \$5 on 6 or 8. The 6/8 bet pays 6 to 5 (\$6 for every \$5 bet), the 5/9 bet pays 3 to 2, and the 4/10 bet pays 1 to 1. So, thanks to the payoff odds, on each and every backup odds bet I'd always win \$6... when I won. Plus I'd win \$3 for the passline or come bet that started the whole thing.

Iowa gaming rules also limit you to a starting bankroll of \$200. And, since it's a cruise, the time you spend at the table is limited to about three hours. Just as a guesstimate, I figured you can throw the dice about five or six times a minute at a craps table, at best, which translates into roughly 1000 tosses of the dice per cruise. So those were my limits.

I wasn't too concerned with 'style' since this was just a program for my own use, but I still always try to adhere to the bare bones of good programming practice, at least. No spaghetti code. Some structure. Self-explanatory variable names. And a few comments to jog my aging memory cells when I run into this long-forgotten program in some remote subdirectory someday.

Line by Line

Every ARexx program has to start with at least one comment line to tag it as a valid ARexx program, so I started my program with nine comment lines that briefly describe the program's purpose and limits. These are followed by a short DO loop that uses the ARexx SOURCELINE command to print lines 2 thru 8 to the shell window when the program is run. This provides a modicum of 'user friendliness.'

The OPTIONS PROMPT prompts the user for a number of riverboat trips to simulate. PULL pulls the answer from the shell window. There are no tests, so the user can type '-100' if he wants to, and the program will happily run forever. Since I'm the only user, I'm assuming I'm smart enough not to do this.

The OPEN line opens our initial output file for us in RAM:. We'll want to sort the data later, so as a reminder of this, we've named the file "sortme." The CALL TIME('R') line resets the ARexx timer, which we're going to use to seed

```
/* IA Craps -- Constant Betting */
/* This program simulates Iowa Riverboat Craps. */
/* It assumes you make a $3 pass or come bet on */
/* each roll of the dice, and make the maximum */
/* backup odds bet on each point rolled. This */
/* version tucks away any part of a bankroll */
/* over $200 and quits if it drops below $50. */
/* Output is sent to a MultiPlot compatible file. */
```

```
DO i = 2 to 8
  SAY SOURCELINE(i)
END
```

```
OPTIONS PROMPT 'Number of Riverboat Trips: '
PULL trips
OPEN('outfile', 'ram:sortme', 'W')
CALL TIME('R')
```

```
DO trips
  Bankroll = 200
  MinRoll = Bankroll
  MaxRoll = Bankroll
  Pocket = 0
  TotRoll = Bankroll
  Bak. = 0
  Odd. = 0
  Odd.4 = 3
  Odd.10 = 3
  Odd.5 = 4
  Odd.9 = 4
  Odd.6 = 5
  Odd.8 = 5
```

```
DO count = 1 to 1000
  Roll = RANDOM(1, 6, TIME('E')*100) + RANDOM(1, 6, →
TIME('E')*100)
  IF (Roll=7) THEN DO i = 4 TO 10
    IF Bak.i~0 THEN DO
      Bankroll = Bankroll - 3 - Bak.i
      Bak.i = 0
    END
  END
  IF Bak.Roll~0 THEN DO
    Bankroll = Bankroll + 3 + 6
    Bak.Roll = 0
  END
  SELECT
    WHEN (Roll=7) | (Roll=11) THEN Bankroll = Bankroll + 3
    WHEN (Roll=2) | (Roll=3) | (Roll=12) THEN Bankroll = →
Bankroll - 3
```

continued ...

our random number generator for the dice throws later. I've found the ARexx pseudorandom number generator seems to be more random if you seed it from the timer.

The Main Loop

We set up the main DO loop without

any counter variable to increment. A simple 'DO trips' will do us, since we never need to refer to the value of the loop counter.

The next block of code sets the initial values of our variables. Though it appears at this stage as though I've carefully assessed the needs and

.info technical support

clearly defined all the variables in advance, this is not the case. I've defined a couple up front, then come back and set up other variables as I've found the need for them. The Bankroll is set to \$200, the Iowa gambling limit. We're going to keep track of how big and how small our bankroll gets, so we set up variables for those values. We will also put any winnings into our pocket, so we create an empty pocket by defining 'Pocket = 0.' We then set up two compound symbols to hold the amount of the backup bets we want to make for various point values ('Odd.') and the values of the actual bets we have going at any one time ('bak.'), which we set to '0' to start with, of course.

Now it's time to jump into the main DO loop for a single trip on the boat. We set the loop to go to 1000, which we've guessed is the maximum number of times we can ever throw the dice in one trip. We roll two dice in the next line, seeding the random number generator with the elapsed time using

```

OTHERWISE Bak.Roll = Odd.Roll
END
IF BankRoll>200 THEN DO
  Pocket = Pocket + (BankRoll - 200)
  BankRoll = 200
END
TotRoll = Bankroll + Pocket
IF MinRoll>Totroll THEN MinRoll = TotRoll
IF MaxRoll<TotRoll THEN MaxRoll = TotRoll
IF (Bankroll<=0) THEN BREAK
IF (TotRoll<=50) THEN BREAK
END
SAY count
WRITELN('outfile', RIGHT(TotRoll,4) ||
RIGHT(TotRoll-MinRoll,4) || RIGHT(MaxRoll-TotRoll,4))
END

CLOSE('outfile')
ADDRESS COMMAND 'sort ram:sortme ram:sorted'
OPEN('outfile', 'ram:header', 'W')
WRITELN('outfile', "*TITLE* CRAPS: " || trips || " RUNS")
WRITELN('outfile', "*XLABEL* RUNS")
WRITELN('outfile', "*YLABEL* BANKROLL")
WRITELN('outfile', "*LEGEND* Final $")
CLOSE('outfile')
ADDRESS COMMAND 'join ram:header ram:sorted as ram:Craps.dat'
ADDRESS COMMAND 'delete ram:sortme ram:sorted ram:header'

```

end

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TIME('E') to make sure things are really mixed up good.

Testing...

Now we check to see what happened. We never really bother with placing a passline or come bet in this simulation. We just assume it's been made on every toss of the dice, and deduct or add to our bankroll depending on the eventual outcome. This saves us a lot of bookkeeping, with the same results. So the first thing we do is to check and see if we rolled a 7. If so, we check the numbers between 4 and 10 to see if we had any backup bets on those numbers. Since this is the first time through the loop, we didn't, but on subsequent rolls of the dice, we're bound to. Since we're checking 4 through 10 inclusive, this means we're also checking the number '7.' Of course, we'll never have a backup bet resting on '7' but who cares? It's easier to leave it in than jump around it. Anyway, if we've rolled a '7,' it wipes out any backup bets we have working, and we start over. So our loop deducts \$3 for the passline or come bet and the amount of the backup odds bet for every one we have active, and sets all our backup bet amounts ('bak.i') to 0.

Then we check to see if we've rolled a number equal to one of our standing backup odds bets. That's what 'IF bak.Roll = 0 THEN DO' does for us. That means we won! So we add \$3 (the payoff amount for our passline or come bet) plus \$6 (the payoff on our odds bet) to our bankroll, reset our bet indicator ('bak.Roll') to 0, and move on.

We've also made a pass or come bet, since we make one on every roll. (They are both really the same bet. It's just terminology. Trust me.) So the next couple of lines check to see if we've won or lost on that bet. WHEN we roll 7 or 11, we win and add \$3 to our Bankroll. WHEN we roll 2, 3, or 12, we lose and subtract \$3. Otherwise, we make our backup odds bet by setting 'bak.Roll.'

Money Management

Now we're done. Except for doing some money management. 'IF BankRoll > 200 THEN DO' checks and sees if we are holding more than \$200

Craps Terminology

Backup odds bet	An additional bet placed on a number after it has been established as the point, which pays off at true odds.
True odds	A bet that pays off based on the actual probability of its occurrence, without a built-in house advantage.
House advantage	The built-in percentage that the house is guaranteed to win, over time, on a particular bet.
Point	Any number thrown on the come-out roll (other than 7 or 11, which are instant winners, or 2, 3, or 12, which are instant losers), which then becomes the number you try to roll again before rolling a 7.
Passline bet	The 'up front,' even-payoff bet you make at the start of a shooter's turn at the dice.
Come bet	Equivalent to a passline bet, but can be made on any roll of the dice.
Come-out roll	The first roll of the dice in a series.

in our hands. If we are, then we put some into our pocket, so we don't gamble it away later if things get tight. We then check to see if the figures we're keeping track of for the minimum number of dollars we're holding ('MinRoll') or the maximum ('MaxRoll') need to be updated by current conditions. We're going to walk away from the table if our Bankroll reaches \$0 or if our total bankroll, including what's in our pocket ('TotRoll') drops below \$50.

At this point, we have the program echo to the screen how many tosses of the dice we lasted through. Just for curiosity's sake (and to give us some occasional feedback that the program is still running). We won't use this data in our output file.

Data Output

Now we write the pertinent data line to our output file, formatting it so that it fits into nice, neat, justified columns four characters wide. The *MultiPlot* program wants the data itself ('TotRoll'), plus error values for how much lower and higher we deviated from the final data. For this, we have to use subtrac-

tion to find the difference between the actual MinRoll and MaxRoll amounts and our final TotRoll. The 'END' at this point loops back and takes another trip on the riverboat.

Now we have to format the file and sort the data. We could do this with ARexx routines, but we're going to be lazy and use AmigaDOS commands instead. The ARexx 'ADDRESS COMMAND' syntax passes commands to AmigaDOS, and we use it to send the 'sort' command to organize our data. Nice, neat, and simple. The next few lines of our program create a 'header' that the *MultiPlot* program requires. We then go back to AmigaDOS to 'join' the two files together, and delete our work files. We end up with a *MultiPlot* format file in RAM: called "Craps.dat" that we can plot and play with.

Now, this program isn't slick and polished, but it's typical of the types of programs I write for myself. It gets the job done. It also used some tricks and shortcuts that saved time and effort, while solving my problem. And that is, to me, what ARexx is all about.

A T P R E S S T I M E

... continued from page 66

forth 36 guidelines for improving CDTV software quality. Many of them repeat what we've said in these pages. Among the many excellent recommendations: 'No low quality images.' 'There should be no signs of AmigaDOS.' 'Efforts must be made to reduce perceived boot-up time.' '[The program] must work on all relevant platforms.' 'Fonts should be simple, anti-aliased, and at least 20 point size.' 'No spelling or grammatical errors are allowed.' 'All titles need to be interruptible at any time.' 'The product should not queue up button presses.' 'All titles must have an important and distinguishing value over doing the product on magnetic media, or by book, or by cassette.' 'Multimedia elements should be comparable to video or cartoons viewed on TV.' If CDTV developers heed what Commodore and Ms. Wellington have told them in this letter, CDTV software should show a marked improvement in quality.

TRAINING MARKET


All the experts agree: corporate training is going to be a multi-billion dollar business. Commodore is jumping on the bandwagon with its 'Commodore Interactive Training System,' a program that integrates the capabilities of the Amiga 3000, CDTV, and AmigaVision. CITS will be promoted as an inexpensive solution to the problem of training and re-training personnel. IMSATT Corporation's *SkillWorks Adult Literacy* courseware is one of the first applications available to demonstrate this technology to business and industry. CBM has mounted a series of ads in a half dozen different professional publications to promote the CITS system.

SMALL WONDERS

Multimedia machines have just not caught on yet with consumers. Though the manufacturers aren't putting sales figures on billboards yet, the industry gristmill intimates that, as I write this, about 5,000 CDTV units have been sold so far in North America, with about 30,000 total worldwide. But North American CD-I unit sales

are said to be under 1,000 units. Both machines are still waiting for the right application to come along and capture the public's imagination and give their sales a sendoff.

Meanwhile, there's yet another competing format that's based on an IBM/PC computer platform. It's called MPC, and will probably appeal mostly to people who currently use PCs.



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A T P R E S S T I M E

116 CDTV SOFTWARE TITLES

What follows is the most complete list we could put together of CDTV software, compiled from a variety of 'official' Commodore sources. Some titles are available now, some soon, some who knows?

- Advanced Military Systems
- Air Traffic Controller
- American Heritage Dictionary
- American Vista Atlas
- Angel of the City
- Animals in Motion
- Animated Coloring Book
- Barney Bear Goes Camping
- Barney Bear Goes to School
- B.A.T.
- Basketball
- Battle Chess
- Battlestorm
- Bill & Ted's Excellent Adventure
- Blockbusters
- Bun For Barney
- Cardinal of the Kremlin
- CDTV Disc Jockey
- CDTV Sports Football
- Case of the Cautious Condor
- Challenge Golf
- Chaos in Andromeda
- Cinderella
- Classic Board Games
- Complete Works of Shakespeare
- Composer Quest
- DJ ReMix
- Defender of the Crown
- Defender of the Crown II
- Dinosaurs for Hire

COALS TO NEWCASTLE

For America, selling electronics to the Japanese has been a bit like carrying coals to Newcastle: there ain't much of a market for it. But Commodore has announced that it has joined together with Mitsui to form a 'CDTV Coalition' in Japan. The Coalition's purpose is to promote and develop CDTV players and titles in and for the Japanese market. Japan Electronics Publishing, PCM Complete, and others have already announced plans to develop software. Still more companies are weighing the possibility. From what we hear, CDTV may have already sold as many units in Japan as in the U.S., so the Land of the Rising Sun could turn out to be a significant market for Commodore.

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- Drakkhen
- Dungeon Master
- Electronic Crayon: All Dogs Go to Heaven
- Excalibur
- Falcon
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- Family Drug and Poison Information Center
- Fun School 3 for Under 5's
- Future Wars
- Garden Fax: Fruits, Vegetables & Herbs
- Garden Fax: Garden Plants
- Garden Fax: Indoor Plants
- Garden Fax: Trees, Shrubs & Roses
- Garfield (Europe only)
- Grolier Encyclopedia
- Guinness CD Disc of Records
- Heather Hits Her First Home Run
- Herewith the Clues
- Horseracing
- Hound of the Baskervilles
- Hutchinson's Encyclopedia
- Illustrated Holy Bible
- Indiana Jones and the Last Crusade
- Indoor Sports
- Jack Nicklaus Golf
- Japan World
- Karaoke Hits I
- Karaoke Hits II
- Keyboard Music Maker
- LTV English
- Learn French With Asterix
- Lemmings
- Living Book Series
- Long Hard Day at the Ranch
- Loom
- Maelstrom
- Many Roads to Murder
- Mickey 1, 2, 3's
- Mind Run
- Mind Run II
- Moving Gives Me a Stomach Ache
- Mud Puddle
- Murder Anyone?
- Murder Off Miami
- Music Maker

The CD-I Connection

Ironies abound in real life. Lately, we've heard from reliable sources that many of the graphics and animations used in the initial wave of CD-I software were actually developed on - what else? - the Amiga. We thought they looked awfully good...

- Musicolor
- My Paint
- New Basics Electronic Cookbook
- Ninja High School Comix
- North Polar Expedition
- Our House
- Paper Bag Princess
- Peter Rabbit
- Prehistorik
- Pro Tennis Tour II
- Psycho Killer
- Raffles
- Reading With Asterix and Son
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- Secret of Monkey Island
- Sherlock Holmes, Consulting Detective
- Sim City
- Snoopy: The Case of the Missing Blanket
- Spirit of Excalibur
- Spy vs. Spy
- Super Games Pak
- Tale of Benjamin Bunny
- Team Yankee
- Terminator
- Thomas's Snowsuit
- Time Table of Business
- Time Table of Science
- Time Table of the Arts
- Trivial Pursuit
- Trump Castle
- Ultimate Basketball
- Unreal
- Video Maker
- Wayne Gretzky Hockey
- Women in Motion
- World Vista Atlas
- Wrath of the Demon
- Xenon II: Megablast

A T P R E S S T I M E

CDTV DEVELOPMENTS

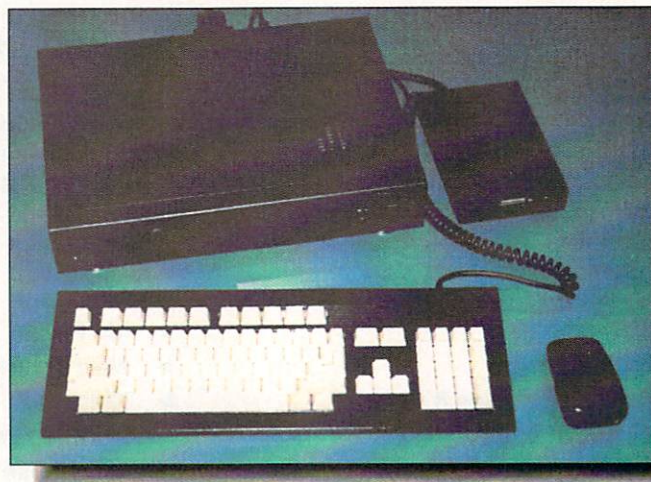
Have you heard the news? After months of downplaying the Amiga inside CDTV, at CES in Las Vegas Commodore announced that it had discovered that not only is CDTV expandable into a *full-blown Amiga computer*, but that capability is probably *the best reason to buy CDTV instead of CD-I!* (What has .info been saying all this time?!?)

No matter that they have become True Believers late in the game... at least Commodore is now promoting the CDTV's expansion capabilities. Let's hope they get the public's attention.

Meanwhile, there is a plethora of CDTV news.

NEW STUFF

CBM has even released the components that make the CDTV-to-Amiga upgrade possible. (Each product carries a 'manufacturers suggested retail price' and a 'suggested introductory price,' so we'll list both.) The *CD1252* (\$79.99/\$59.99) is a wireless infrared mouse molded in black plastic to match the CDTV case. It's not only Amiga software compatible, but gives you mouse control over many CDTV titles, as well. The mouse is included in the *CD1500 Professional Bundle* (\$249.99/\$199.99), which also gives you an Amiga-compatible black plastic disk drive, a black Amiga-2000 style keyboard, v1.3 of AmigaDOS, an Amiga 500 manual, and the



Commodore's *Professional Bundle* expands CDTV into a full-fledged Amiga system.

Appetizer software pack. (Our keyboard was a standard A2000 keyboard spray-painted semi-gloss black, which looked a little cheesy, but Commodore assures us that they are now shipping molded black plastic versions.) The introduction of this package means you'll be able to put together a CDTV-based Amiga system with a meg of chip RAM, a CD-ROM drive, a floppy disk, infrared mouse, and keyboard for about \$1000, street price. That makes CDTV the least expensive CD-ROM based computer in the world; maybe *that* will turn some heads!

Commodore has also released the *CD1200* trackball (\$129.99/\$99.99), which we haven't seen yet. But we did get the *CD1300 Video Genlock* (\$249.99/\$199.99) in the mail. The genlock is a handy device,

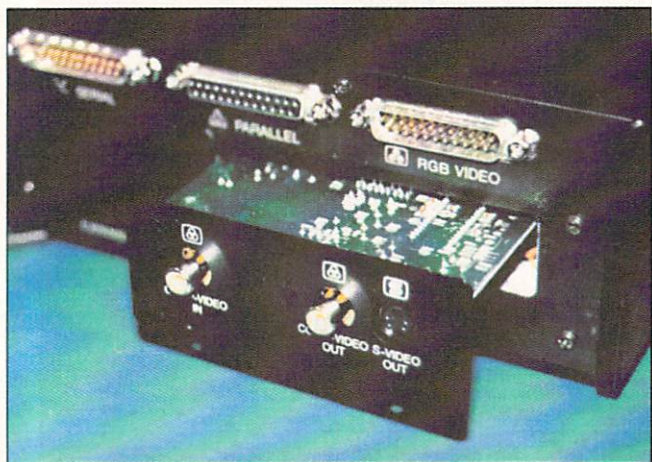
and can be turned on or off from the remote. It replaces the RF output board, so if you genlock you'll have to do without RF output; that's fine with us.

If you're short on disk caddies, get the *CD1400*, a pack of two CD caddies that retails for \$14.99. (And pray that Commodore will get rid of the damn things someday.) Commodore has also released the CDTV plug-in personal memory cards. (Remember the front slot? The one nobody supports?) The 64K personal memory card, the *CD1401*, goes for \$129.99/\$99.99. The 256K *CD1405* is \$349.99/\$299.99. Instead, we recommend you pick up a disk drive for less than the 'introductory' price of the 64K card. It just makes a lot more sense.

And Commodore showed its *A560* CDTV-compatible CD-ROM drive at CES again. It should be available by the time you read this. Really. And Commodore adds that producing a compatible CD-ROM drive for the A2000 is a 'top priority.'

QUALITY CONTROL

Some of the best CDTV news we've had lately came in mid-January in the form of a letter sent to CDTV developers by Gail Wellington, Commodore's Director of Special Projects (and thus, CDTV). While congratulating developers on their efforts for 1991, she added 'As we move on to 1992, Commodore's focus is on title quality.' The six pages that follow set



The new *CD1300* genlock for CDTV and home video producers.

continued on page 63 . . .

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 - 20 ☐ No Opinion

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- 21 ☐ Yes
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- D. Which type of article do you prefer?
- 23 ☐ Product Review
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- 25 ☐ Easy to Understand
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- F. Do you find subscription renewal notices mailed to you
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 - 29 ☐ Not Helpful
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- G. What **two** aspects are **most influential** in your decision to purchase .info each month?
- 31 ☐ General topics covered in that particular issue
 - 32 ☐ Specific products reviewed in that issue
 - 33 ☐ The look of the cover
 - 34 ☐ The number of total pages in that issue
 - 35 ☐ Other

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- H. How many of the past four issues have you purchased?
- 36 ☐ Four of the past four
 - 37 ☐ Three of the past four
 - 38 ☐ Two of the past four
 - 39 ☐ One of the past four

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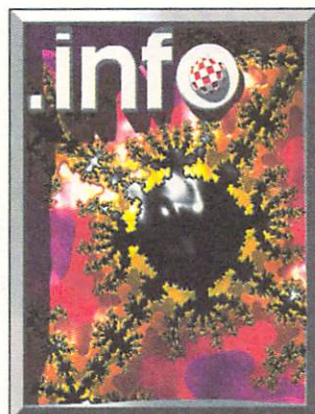
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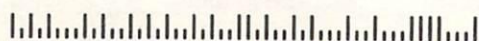
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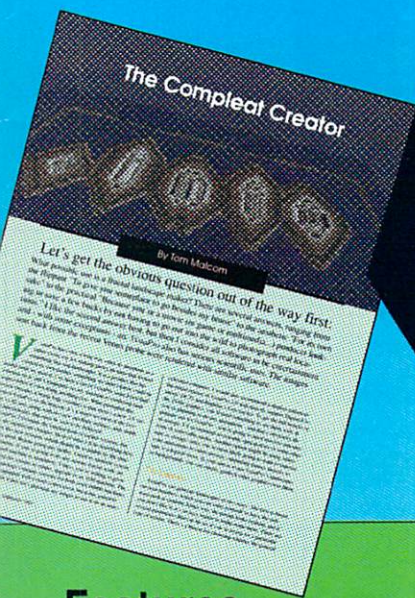
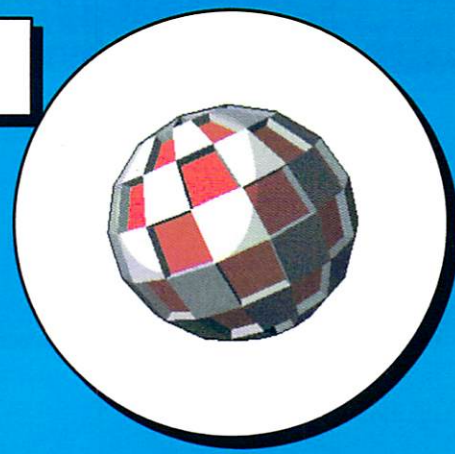
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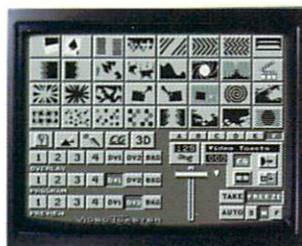
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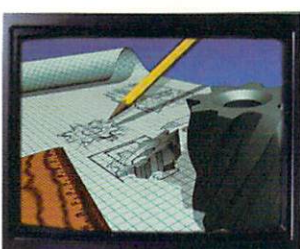
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